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IN MEMORIAM: JAMES CUSHING MERRILL.

BORN MARCH 26, 1853.— DIED OCTOBER 27, 19(

BY WILLIAM BREWSTER.

With Portrait (Plate VII).

JAMES CUSHING MERRILL, third of that name in direct descent, was born in Cambridge, Massachusetts, on March 26, 1853. Both branches of his family were of old New England stock, derived originally from England. His father, who died when he was about fifteen years of age, was a lawyer by profession, as was also his grandfather, Judge Merrill of Boston, who married Ann Saltonstall of Salem. His mother was (or, rather is, for she is still living) Jane (Hammond) Merrill. I first made his acquaintance at a school which we entered together more than half a century ago. He was then a shy, graceful, slenderly-built boy, already interested in Natural History and possessed, if I remember rightly, of a small collection of end-blown birds' eggs and native butterflies. After attending several private schools in Cambridge, and the well-known one then kept by Mr. Dixwell in Boston, he went to Germany where he remained for a year or two, and began the study of medicine. On returning to this country he entered the medical department of the University of Pennsylvania from which he was graduated in 1874. About a year later he received the appointment of Assistant Surgeon in the United States Army. His first assignment was to St. Louis Barracks, Missouri, in 1875. After this he was stationed

successively at the following army posts:— Fort Brown, Texas, from February, 1876, to June, 1878; Fort Shaw, Montana, from May, 1879, to May, 1880; Fort Custer, Montana, from June, 1880, to the autumn of 1883; Columbus Barracks, Ohio, from 1883 to 1886; Fort Klamath, Oregon, from November, 1886, to August, 1887; Watervliet Arsenal, New York, September–October, 1887; Frankford Arsenal, Pennsylvania, October, 1887, to November, 1889; Fort Reno, Oklahoma, November, 1889, to February, 1891; Fort Sherman, Idaho, from October, 1894, to some time early in the year 1897.

The above data, taken mainly from letters and bird skins in my possession, show how very many of his maturer years were spent by Dr. Merrill in wild and remote places. This period may be said, indeed, to have represented the better part of his life, in more senses than one. Throughout it he enjoyed the constant companionship of his devoted mother who shared with him the isolation and privations inseparable from such an experience, and whose intellectual, as well as maternal, pride and sympathy in his professional and scientific work must have added immeasurably to his happiness and comfort. Everywhere he made warm friends among his brother officers and the enlisted men under his care, winning easily their affection and respect by the fidelity with which he performed his professional duties as Post Surgeon. To these he gave — as was fitting — his first allegiance, never allowing anything else to interfere with them. Fortunately they were not ordinarily so onerous as to prevent him from devoting much of his time to other interests, chief among which was the study of natural history. This interest, as we have seen, was not wanting in his early youth. With advancing years it deepened and broadened until it became, next to his profession, the ruling passion of his life. Every branch of zoölogy attracted him, but he gave his attention mainly to ornithology and entomology. Like many another army officer, he was a keen sportsman and a persistent fisherman. Opportunities for indulging all these kindred tastes were not lacking at the frontier posts where he was stationed, and he improved them to the utmost, devoting an especially large share of his leisure time to studying and collecting birds, with their nests and eggs, and insects, particularly beetles. He did not, however, attempt to form a private

collection, but with characteristic generosity gave nearly all his specimens to personal friends and to museums; most of the nests and eggs passing, through Major Bendire's hands, into the National Museum, and of the birds into the collection of the writer of this memoir. Altogether, Dr. Merrill's life on the frontier may be said to have been not less profitably than happily spent. It is a pity that it could not have been continued still longer since it suited him so perfectly in every way.

Although qualified both by nature and by training for dealing with abstruse and difficult problems of science, and by no means without interest in its purely technical side, Dr. Merrill was distinctively a field naturalist. His published ornithological writings relate almost exclusively to the habits and distribution of western birds. They are not numerous, but their quality is of high order, for he was an exceptionally accurate and intelligent observer, as well as a pleasing and finished writer. The earliest, and perhaps also most important one of any length, is that relating to the birds which he found in 1876, 1877, and 1878, in the neighborhood of Fort Brown, Texas. Although this region had been visited in 1863 by a competent British ornithologist, Mr. H. E. Dresser, its wonderfully rich and varied avifauna remained comparatively unnoticed and unknown until attention was called to it by Dr. Merrill. He took there specimens of no less than twelve species and subspecies of birds which, up to that time, had not been ascertained to occur anywhere north of the Mexican boundary; besides many nests and sets of eggs then undescribed or of exceeding rarity.

Other papers, of almost equal value and importance, are his 'Notes on the Birds of Fort Klamath, Oregon,' published in 1883, and his 'Notes on the Birds of Fort Sherman, Idaho,' which appeared in 1897. At Fort Brown he obtained a Goatsucker, at Fort Klamath a Horned Lark, and at Fort Sherman a Song Sparrow, which have been found to represent forms previously unknown to science, and now bear his name.

Although these and others of his ornithological papers are excellent of their kind, no one of them is equal in literary merit to his Memorial of Major Bendire, published in 1898. He not only admired, but loved, the bluff, upright Major — as, indeed, who did not? — and this tribute to the memory of his friend is an altogether admirable piece of work.

Despite his extensive experience with many of the larger mammals of our western plains and mountains, his only papers concerning them of which I have any knowledge are one 'On the Habits of the Rocky Mountain Goat,' published in 1880, and another entitled 'A Silver Tip Family' (of Grizzly Bears), which appeared in 1897.

In a letter written at Fort Custer, on September 5, 1883, Dr. Merrill says: "I have recently received an invitation to the convention of the A. O. U., and greatly regret that it will be impossible for me to be present at that time." This shows that he was among the select few who were asked to help organize our Union; and that, had he not been prevented by military duty from taking the long journey to New York he would have been one of its Founders. As it was, he was elected an Active Member at this meeting, afterwards becoming a Life Member and Fellow. He was one of the earliest members of the Boone and Crocket Club; a Corresponding Member of the Linnæan Society of New York; an Associate Member of the Boston Society of Natural History; a Corresponding Member of the Nuttall Ornithological Club; a Member of the Biological Society of Washington; a Member of the Society of Colonial Wars; an Active Member of the Association of Military Surgeons; a Member of the Washington Academy of Sciences; a Member of the Association of Medical Libraries; a Member of the Cosmos Club of Washington; a Member of the Devil's Island Shooting Club in Currituck Sound; and a Member of the Tourelle Fishing Club in Canada.

Early in February, 1891, to his "intense surprise," as he wrote me at the time, Dr. Merrill was summoned from Fort Reno to the Surgeon General's Office in Washington to take "charge of all medical supplies and medical property of the Army." This employment was novel to his experience and probably not altogether to his taste; but he expressed no dissatisfaction with it, and continued to apply himself to it for upwards of three years. On November 16, 1892, he was married to Mary Pitt Chase of Maryland. On March 13, 1894, he was made a full surgeon in the Army, with the rank of Major. In October of the latter year he was again ordered to a western post, Fort Sherman, Idaho, where, with his wife, and mother, he remained for a little more than two years, revelling once more, as it proved for the last time, in the free out-of-

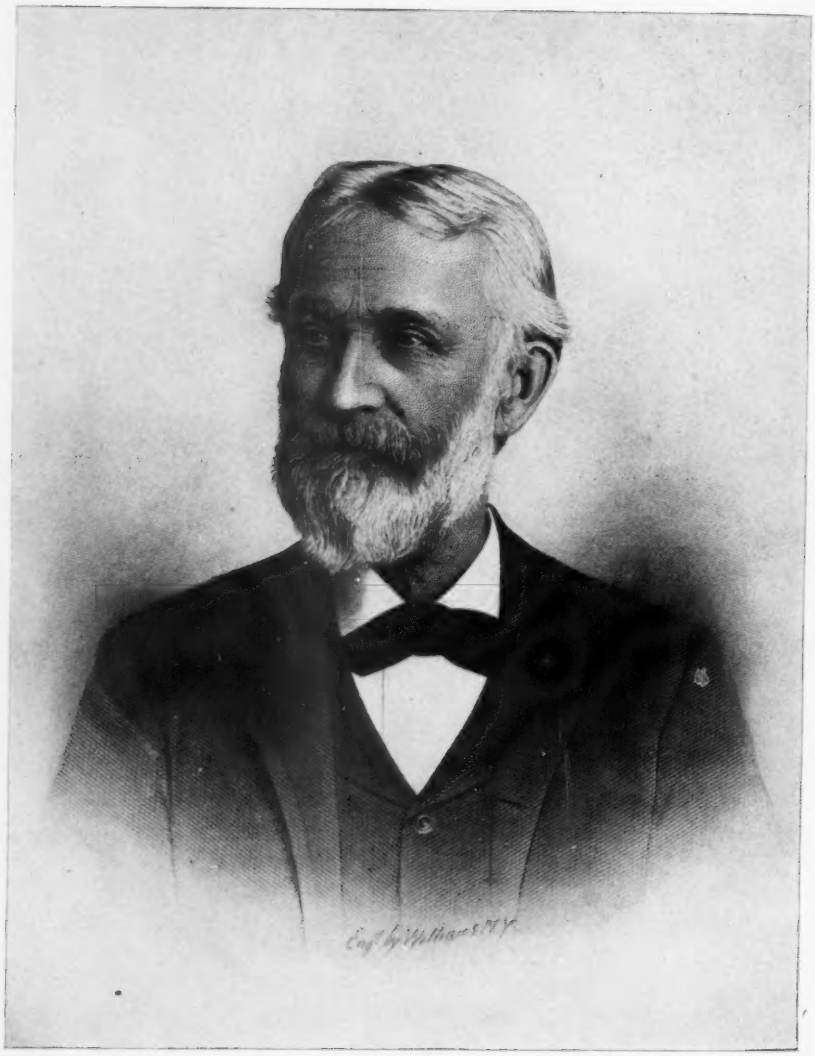
door life and making a considerable collection of birds. When he returned to Washington, early in 1897, it was to receive the appointment of Librarian at the Surgeon General's Office. Here he spent the brief remainder of his days, performing, with his accustomed steadfastness and ability, tasks perhaps not altogether uncongenial, but obviously irksome to a man of his temperament, and so very arduous and confining, that, by degrees, his health and strength yielded to the strain. Not so his courage, for up to the very last he maintained a brave and serene front; applying himself unremittingly to his work whenever his strength permitted, and almost up to the last calming the anxiety of intimate friends by the cheerful assurance that he was not really ill. But by the summer of 1902, his condition had become so obviously serious that he was induced to spend a few weeks at White Sulphur Springs, Virginia, in the hope that the rest and change might do him permanent good; they proved of no avail, however, and he died of chronic nephritis in Washington on October 27, 1902.

When in the prime of life, Dr. Merrill was a fine and indeed distinguished-looking man, rather tall and very strongly built, with that erect, military bearing characteristic of army officers the world over. He was an excellent linguist, speaking two foreign languages, French and German, and reading and translating no less than nine others: viz. Latin, Greek, Italian, Spanish, Portuguese, Dutch, Danish, Swedish and Russian. He had refined yet very simple tastes, quick intelligence, sound judgment, high ideals of honor, manliness and duty, untiring patience and industry. Although fearless, self-reliant and inflexible of purpose, in the discharge of his customary duties, his modesty respecting his general ability and desserts amounted almost to humility, and, no doubt, prevented him from aspiring to tasks and honors which otherwise he might have undertaken and achieved. In speech, as in thought, he was direct and absolutely sincere, yet very kindly, with a gentle courtesy of manner which had an old time flavor to it and was irresistibly winning. No one could meet him, even casually, without being impressed by it and by the obvious fact that it was something different from the affability of a merely well-bred man. Those who knew him intimately recognized that it was but the outward reflection of the dignity, sweetness and purity that lay within. He was so wholly

superior to jealousy, prejudice and worldliness, and to all considerations of selfish policy, that he never seemed to suspect their possible existence in others. Trustful, sympathetic, true of heart, honest of purpose, intensely loyal in his friendships, generous and charitable in his relations with all men, he lived a brave, unselfish and useful life, and at its close met death with perfect fortitude and serenity.

The following list of notes and papers written by Dr. Merrill is probably far from complete but is believed to include nearly if not quite all the titles of his contribution to the literature of Ornithology and Mammalogy.

1. Notes on Texan Birds. *Bull. Nutt. Orn. Club,* Vol. I, Sept. 1876, pp. 88, 89.
2. A Humming Bird new to the Fauna of the United States. *Bull. Nutt. Orn. Club,* Vol. II, Jan. 1877, p. 26.
3. Notes on *Molothrus æneus* Wagl. *Bull. Nutt. Orn. Club,* Vol. II, Oct. 1877, pp. 85–87.
4. Occurrence of the Western Nonpariel and Berlandier's Wren at Fort Brown, Texas. (These records are given over J. A. Allen's signature in the form of a literal quotation from a letter written to him by Dr. Merrill.) *Bull. Nutt. Orn. Club,* Vol. II, Oct. 1877, pp. 109, 110.
5. Occurrence of *Myiarchus crinitus* var. *erythrocercus,* Sclat., at Fort Brown, Texas. *Bull. Nutt. Orn. Club,* Vol. III, April, 1878, pp. 99, 100.
6. The Buteo Albi-Caudalis. (Misprint for *albicaudatus,* the note relating to a specimen taken near Fort Brown, Texas). *Forest and Stream,* Vol. X, no. 23, July 11, 1878, p. 443.
7. Notes on the Ornithology of Southern Texas, being a List of Birds observed in the Vicinity of Fort Brown, Texas, from February, 1876, to June, 1878. *Proc. U. S. Nat. Mus.,* Vol. I, 1878, pp. 118–173.
8. Maynard's Birds of Florida [review]. *Bull. Nutt. Orn. Club,* Vol. IV, April, 1879, pp. 114, 115.
9. On the Habits of the Rocky Mountain Goat [being a literal transcript in full of a letter written by Dr. Merrill to Professor Baird]. *Proc. U. S. Nat. Mus.,* Vol. II, 1880, pp. 283, 284.
10. Notes on the Winter Plumage of *Leucosticte tephrocotis* Sw., and *L. tephrocotis* var. *littoralis* Bd. *Bull. Nutt. Orn. Club.* Vol. V, April, 1880, pp. 75–77.
11. Nesting Habits of the Canada Goose (*Bernicla canadensis*). *Bull. Nutt. Orn. Club,* Vol. VIII, April 1883, pp. 124, 125.
12. Republication in 'The Auk' of Descriptions of New North American Birds — A Suggestion. *Auk,* Vol. II, Oct. 1885, p. 389.



very faithfully yours,
Charles Aldrich.

13. Notes on the Birds of Fort Klamath, Oregon. With Remarks on certain species by William Brewster. *Auk*, Vol. V, April, July and Oct. 1888, pp. 139–146, 251–262, 357–366.
14. A Silver Tip Family [of Grizzly Bears]. The Book of the Boone and Crocket Club, New York, 1897, p. 225.
15. Notes on the Birds of Fort Sherman, Idaho. *Auk*, Vol. XIV, Oct. 1897, pp. 347–357; Vol. XV, Jan. 1898, pp. 14–22.
16. In Memorian: Charles Emil Bendire. *Auk*, Vol. XV, Jan. 1898, pp. 1–6.
17. Spotted Sandpiper removing its Young. *Auk*, Vol. XV, Jan. 1898, p. 52.

IN MEMORIAM: CHARLES ALDRICH.

BORN OCTOBER 2, 1828.—DIED MARCH 8, 1908.

BY RUTHVEN DEANE.

With Portrait (Plate VIII).

OF THE twenty-five Founders of the American Ornithologists' Union, we have lost nine by death, the last of whom, and the subject of this sketch, being the Hon. Charles Aldrich[1] of Boone, Iowa.

Mr. Aldrich was born October 2, 1828, in the town of Ellington, Chautauqua County, N. Y., and died March 8, 1908, and was therefore at the time of his death in his eightieth year. Although active in his daily occupations, he had been in delicate health for some years, when an attack of grip compelled him to give up his duties. While he rallied from time to time, and entertained hopes of soon returning to his work, complications set in and after an illness of seven weeks he passed away.

Mr. Aldrich was married at Knowlesville, N. Y., to Miss Matilda Olivia Williams on July 20, 1851. She was in full sympathy with all her husband's pursuits and was a member of the American Society

[1] I am greatly indebted for some of the facts and data contained in this sketch to the late Miss Mary R. Whitcomb of Des Moines, Iowa, who as assistant Curator of the Historical Department, was closely associated with Mr. Aldrich for twelve years.

for the Prevention of Cruelty to Animals and a lover of birds. She died at Boone, Iowa, September 18, 1892. Mr. Aldrich was married a second time, November 12, 1898, to Miss Thirza Louisa Briggs of Webster City, Iowa, a life long friend of his first wife. Mr. Aldrich is survived by the widow, a brother, Hiram Aldrich of Cedar Rapids, Ia., and two sisters, Mrs. Mary Kettell of Cambria, Wyoming, and Mrs. Jane Lee of Olean, N. Y.

Young Aldrich received his early education in the common schools, and at the age of sixteen entered the Jamestown Academy for one year, but his practical education began in June, 1846, when he entered the printing office of the 'Western Literary Messinger' in Buffalo, N. Y. Here he served an apprenticeship in the printer's art, as also in the villages of Attica and Warsaw, N. Y., and Warren, Penn. In June, 1850, he established the 'Cattaraugus Sachem,' a weekly newspaper, at Randolph, N. Y., which he conducted for one year. During the following five years he conducted the 'Olean Journal,' and then returned to the home farm in Little Valley, remaining there until his removal west in 1857.

Settling at Webster City, Iowa, at that time with about 200 inhabitants, and only 1500 in the County, he started under most primitive circumstances the 'Hamilton Freeman,' and as success favored his push and energy, he later was connected in the publication and editing of the 'Dubuque Times,' and 'Marshall County Times,' and was a frequent correspondent of the 'Chicago Inter-Ocean' and many other papers.

In addition to Mr. Aldrich's marked literary ability, he bore a prominent part in promoting the political and historical welfare of his favorite State. He had four times been chief clerk of the House of Representatives, from 1860 to 1870, and served the State in five of its legislatures, and in 1869 Iowa College conferred upon him the degree of A. M. He was a member of the State Historical Society of Iowa, the American Historical Association, Loyal Legion, Grand Army of the Republic, Pioneer Lawmakers' Association, and many other organizations.

In 1862 he entered the Union Army, and was made Adjutant of the Thirty-second Iowa Infantry, serving as such for eighteen months, when failing health caused him to tender his resignation and return to Iowa, receiving his honorable discharge January 28,

1864. In 1875 he was unofficially connected with the United States Geological Survey under Dr. F. V. Hayden, which was engaged that year in Colorado, Utah, Arizona, and New Mexico. While in the field he wrote frequent letters to the 'Chicago Inter-Ocean' which were widely read and often copied.

For many years Mr. Aldrich devoted his time, energy and money to the building up of the Historical Department of Iowa, and that this has become one of the monuments of the State is principally due to his untiring zeal and influence, and most of the valuable relics deposited there he has personally gathered and donated.

In early youth Mr. Aldrich acquired a taste for the collecting of autograph letters, portraits and other mementos of distinguished persons, and in this he was constantly assisted by his wife. The collection had grown to such magnitude that in 1884 he presented it to the State, on condition that it should be kept by itself in suitable cases in the State Library, where it has since been known as the 'Aldrich Collection,' and he was made curator and secretary of his treasures, constantly adding to them up to the time of his death.

This collection, comprising thousands of signed autograph letters, a large proportion being accompanied by portraits, represent our presidents, statesmen, officers of the Army and Navy, scientists, and men and women of title, literature and art from all over the world. Among the ornithologists represented is a letter of J. J. Audubon, dated New York, July 9, 1841, in which he speaks of "number 34" of his 'Birds of America,' which was then being published; and a letter of Alexander Wilson, dated Pittsburgh Penn., February 22, 1810, and addressed to Alexander Lawson, his engraver. Wilson describes his journey through Pennsylvania, is much gratified at his success in obtaining nineteen subscribers to his work in Pittsburgh, and writes that he has purchased a skiff which he has named the 'Ornithologist,' and of his intention to paddle down the Ohio River, over 500 miles, to Cincinnati.

Other letters are from Charles Lucian Bonaparte, Titian R. Peale, Ord, Baird, Kennicott, and Coues, besides such naturalists as Linnæus, Darwin, Owen, Wallace, Belt, Seeley, Waterton and many others. In addtion to these relics the Historical Department comprises an extensive collection of books, pamphlets and files of early State newspapers. In the museum department is a collection

of birds, presented by the Smithsonian Institution, besides mammals, insects, and representatives of other branches of zoölogy.

The 'News-Republican' of Boone, Ia., says: "Curator Charles Aldrich was inspired to do this work by the knowledge that posterity would be greatly hampered and disappointed unless it were done. While the great mass of Iowans were content to deal with the present, taking no thought of the past or future, one man had the insight and the unselfish devotion to his race to inaugurate for them a place for a permanent record of their growth. Slowly and by unstinted energy Mr. Aldrich brought the State into a realizing sense of the need of the Historical Department, which now is rich in its fund of information and its precious relics of the past. None question now the need and value of Curator Aldrich's work. He has founded an institution which will live as long as literature and art, and for which generations yet unborn will rise and call him blessed."

In 1883 Mr. Aldrich travelled extensively in Europe, visiting England, Ireland, Germany, Italy and France, but he seems to have been particularly attracted with England, which country he visited twice later. While there he visited the great museums of London and South Kensington, as well as, in his own country, the New York American Museum of Natural History and the Philadelphia Academy of Sciences. These were all graphically described in his writings. While Mr. Aldrich had been a devoted lover of birds and all nature from early boyhood, he was not in the proper sense of the word an active ornithologist. His thoughts were, nevertheless, always in touch with the subject and in a quiet way he was frequently writing articles for the press and was deeply interested in bird protection.

An Iowa paper states: "In the death of Mr. Aldrich the birds and dumb animals lose one of the best and strongest friends they ever had. His versatile pen was ever ready to take up their battles and he did as much as any man in Iowa to create proper sentiments for the care and treatment of all animals and birds." In the early volumes of the 'American Naturalist' are short notes from his pen and a few of his observations are recorded in the 'Bulletin of the Nuttall Ornithological Club' and 'The Auk,' between 1878 and 1885. From 1897 to 1904 articles appeared over his signature in

the Des Moines, Boone, and other Iowa daily papers. Among these titles are, 'Bird Protection in England,' 'Wild Birds know their Friends,' 'The merciless war upon the Birds,' 'Hawks and Owls,' 'The Passenger Pigeon,' 'How Settlement affects the Birds, both upon wet and dry land,' and numerous other articles. Mr. Aldrich drafted and secured the passage of the Iowa law of 1870 which protects from wanton destruction the harmless and useful birds. Of this pioneer measure he was always very proud. It still remains in the code of Iowa, though slightly amended.

Mr. Aldrich was much interested in the Kendall Young Library of Webster City, Iowa, the town where he first settled. To this library he donated a fine collection of books, chiefly on subjects of natural history, and among them such standard works on ornithology as were published by Audubon, Wilson, Baird, Coues, Ridgway, Bendire, 'Bulletin of the Nuttall Ornithological Club' and the works of several prominent English authors.

Dr. Elliott Coues was a warm and personal friend of Mr. Aldrich; their mutual love for birds and historical research, was naturally the strong tie that brought them together. They were both interested in the Expedition of Lewis and Clark. It was Mr. Aldrich who first aroused public interest and secured a provision from the legislature of the State for the erection of a monument near Sioux City, to mark the grave of Sergeant Floyd, a member of the Lewis and Clark Expedition, who died there August 20, 1804, and was the first American soldier buried in Iowa soil. He was much interested in Dr. Coues's reprint of Lewis and Clark, and rendered him assistance in its preparation, in recognition of which grateful acknowledgment was expressed in the preface. It was at the request of Dr. Coues that an invitation was sent to Mr. Aldrich, dated August 1, 1883, inviting him to attend a Convention in New York of American Ornithologists, for the purpose of founding an Ornithologists' Union.

A close friend to Mr. Aldrich writes in the 'Annals of Iowa': "One of the most conspicuous traits of Mr. Aldrich's many sided character was his intense love of old time friends, and those friends, who are legion, included birds and dumb creatures, no less than men. His successful advocacy of a law for the protection of song birds, his delight in the songs and domestic debates and difficulties

of the wrens that nested in the south front of his house at Boone, bespoke a nature keenly sensitive to the beauties and finest melodies of Nature."

Thus we have lost from our ranks a man whose long and uncheckered life was made up of those finer instincts which peculiarly fitted him for a journalist, soldier, legislator, historian, and lover of birds.

RICHARD BOWDLER SHARPE.

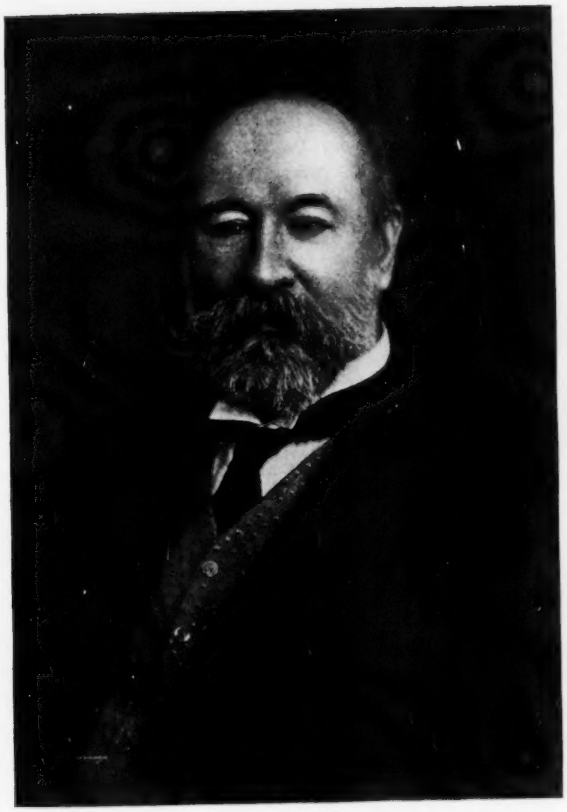
BY J. A. ALLEN.

With Portrait[1] (*Plate IX*).

RICHARD BOWDLER SHARPE, an Honorary Fellow of the American Ornithologists' Union, died at his home in Chiswick, London, on Christmas Day, 1909, at the age of 62 years, after a brief illness from pneumonia.

Dr. Sharpe was born in London, November 22, 1847, the eldest son of Thomas Bowdler Sharpe, a well-known publisher in London, and grandson of the Rev. Lancelot Sharpe, rector of All Hallows Staining, London, and for many years headmaster of St. Saviour's Grammar School in Southark. At the age of six he was placed in the care of an aunt, who kept a preparatory school at Brighton, where he passed three years. At nine he was transferred to a grammar school in Peterborough, of which his cousin, the Rev. James Wallace, was master. Here he "gained a King's Scholarship, which not only guaranteed his education but carried with it a small amount of money." Later his cousin accepted the head mastership of a grammar school at Loughborough, and young Sharpe followed him to his new post where he continued to win the chief prizes of the school. At the age of sixteen, at the instance of his father, he went to London and took a clerkship in the establishment of W. H. Smith & Son, and two years later entered the employment of B. Quaritch, the eminent London publisher and bookseller. At the age of nineteen he was appointed librarian to the Zoölogical Society, which office he held for five years, when,

[1] Reproduced, with permission, from 'British Birds,' Vol. III, February, 1910.



Maull & Fox

British Birds
Vol III Pl 13.

J. Wolley Wraye

Born Nov. 22nd 1847. Died Dec. 25th 1909.

in 1872, he accepted the post of Senior Assistant in the Department of Zoölogy at the British Museum, made vacant by the death of that eminent ornithologist, George Robert Gray, which position he held till his decease, having been promoted in November, 1895, to be Assistant-Keeper in charge of the Vertebrate section of the Zoölogical Department.

Sharpe early gave evidence of a strong love of natural history, especially of birds and insects, and his ornithological work had begun in earnest at the time he accepted his first clerkship in London, at which time, we are told,[1] "he was devoting every moment of his spare time to the study of birds, with the determination to earn his living as an ornithologist." His first published work was his 'Monograph of the Alcedinidæ, or Family of Kingfishers,' begun when he was seventeen years of age and finished when he was twenty-two, a quarto volume of nearly 400 pages, with 121 colored plates. On the completion of this great work he began in 1871, in coöperation with Mr. H. E. Dresser, 'A History of the Birds of Europe' (4to, with colored plates), but the following year he was obliged to abandon this undertaking, completed later so successfully by his colleague, to take up his official duties as head of the Ornithological Department of the British Museum.

Here his ability was so quickly appreciated that he was soon entrusted with the preparation of the first volume of the 'British Museum Catalogue of Birds,' published in 1874, which gigantic work (8vo, 27 vols., 1874–1898) employed the chief part of his time and energies, apart from the official routine of his curatorship, for a quarter of a century, to be followed immediately by his 'Handlist of the Genera and Species of Birds' (8vo, 5 vols., 1899–1909.)[2] Of the 'Catalogue' he prepared personally volumes I–IV, VI, VII, X, XII, XIII, XXIII, and XXIV, and parts of volumes XVII and

[1] This notice is based on the biographical sketch of Dr. Sharpe published in 'British Birds' for February, 1910 (Vol. III, pages 273–288, with portrait), by Mr. C. E. Fagan, and on that of Mr. W. R. Ogilvie-Grant in the 'Bulletin' of the British Ornithologists' Club (Vol. XXV, Feb. 1910, pp. 43–49, also with portrait and a bibliography by Mr. C. Chubb, pp. 49–70), from which nearly all of the facts here given relating to his personal history are derived, chiefly from Mr. Fagan's paper, this notice having been written before Mr. Grant's was received.

[2] For recent reviews of the 'Handlist' by the present writer see this journal, Vol. XXVII, Jan. 1910, pp. 93–95, and 'Science,' N. S., Vol. XXXI, No. 790, pp. 265–267, February 18, 1910.

XXVI, comprising nearly one half of the 11,500 species contained in the entire work.

These two undertakings, the 'Catalogue' and the 'Hand-list,' published during the thirty-seven years of his official life as Curator of the British Museum Department of Birds, are only a part, although a considerable part, of his ornithological output during this long period; for he found time to complete the unfinished works of several of his ornithological colleagues, and to write a large number of special publications on birds which alone might be considered a remarkable series to be produced by a single author. The first include Gould's 'Birds of New Guinea,' of which two-thirds was published after Gould's death; also five parts of Gould's 'Monograph of the Trochilidæ,' to say nothing of Sharpe's contributions to some of Gould's other works. He also completed and edited Seebohm's 'Eggs of British Birds,' and his 'Monograph of the Turdidæ,' and after Osbert Salvin's death assisted Godman in the completion of the 'Aves' of the 'Biologia Centrali-Americana.'

His own separate works include a 'Monograph of the Birds of Paradise and Bower-birds' (folio, 1891–1898); a 'Monograph of the Hirundinidæ' (4to, 1885–1894, with C. W. Wyatt); a new edition of Layard's 'History of the Birds of South Africa' (8vo, 1875–1884); 'An Analytical Index to the Works of the late John Gould,' with a biographical memoir (4to, 1893); 'A Handbook to the Birds of Great Britain' (4 vols., 8vo, 1894–1897); 'A Review of Recent Attempts to Classify Birds' (1891); Part III of the 'Catalogue of the Osteological Specimens in the Museum of the Royal College of Surgeons (Aves, 8vo, 1891); 'History of the Bird Collection in the British Museum' (1906).

He also wrote the reports on the birds for the 'Zoölogy' of various Government and private Exploring Expeditions, as the Voyage of the 'Erebus' and 'Terror' (Birds, 4to, 1875); the Voyage of the 'Alert' (1884); the Second Yarkand Mission (1891); Oates's 'Matabele Land and Victoria Falls' (1881 and 1889); and Jameson's 'Story of the Rear Column of the Emin Pasha Relief Expedition' (1890).

His ornithological papers in scientific journals, beginning in 1866, number nearly four hundred, and some of them are of con-

siderable length, while for fifteen years he was the recorder for the Class Aves in the 'Zoölogical Record,' beginning with the year 1870 and ending with 1908, with two considerable periods of intermission when the post was filled by others.

In addition to this long list of technical works and papers, he also found time to write various popular works on birds, as the bird volume of Cassell's 'New Natural History' (Aves, 1882), 'Birds in Nature' (4to, 1888), the bird volume of the 'Concise Knowledge Library' (8vo, 1897), 'Sketch-book of British Birds' (8vo, 1898), 'Wonders of the Bird World' (8vo, 1898), and a two-volume edition of Gilbert White's 'Natural History and Antiquities of Selborne' (1900), besides lesser contributions of a similar character.

His remarkable success in building up the National collection of birds, from 35,000 in 1872 to about 500,000 in 1909, despite the weeding out of many duplicates, is well known. Many of the important collections that were transferred to the British Museum by their donors were avowedly contributed to this institution in consequence of the presence of Dr. Sharpe at the head of the Ornithological Department, as notably the great Hume and Tweedale collections, and others. Many others were acquired by purchase through the influence of his enthusiastic and persistent appeals to the Trustees of the Museum.

His curatorial duties naturally absorbed a large amount of his time and limited his opportunities for research and literary work, so that, it is currently stated, a large part of the 'Hand-list' was written at his home after a day of toil at the Museum.[1]

Dr. Sharpe's scientific interests were rather closely restricted to the class of birds, but here he was easily a master, and his influence upon the progress of ornithology during his lifetime would be hard to measure, and in certain ways was undeniably preëminent. In his knowledge of the external characters of birds, and his ability to remember and recognize species offhand, he was probably without a peer; but he was not a deep student of the anatomy

[1] Since the above was written the January, 1910, issue of 'The Emu' has been received, containing a letter from Dr. Sharpe to one of the editors, in which Dr. Sharpe says: "I seldom have a moment to myself, and have to do most of my work at home, and scarcely an evening that I do not work from 8 P. M. till 2 and 3 A. M. I have finished Vol. V of the 'Handlist' at last, thank God!"

of birds, and his list of titles reveals few papers bearing upon their internal structure. His 'Review of Recent Attempts to Classify Birds,' presented at the Second Ornithological Congress at Budapest in 1891, was based almost wholly on second-hand knowledge of their internal anatomy, and hence his system of classification then propounded was necessarily eclectic and unchecked by personal knowledge of the relative weight and bearing of alleged anatomical characters. Although adopted by him in the 'Handlist,' it has not escaped much unfavorable criticism.

Dr. Sharpe was a man of warm social instincts, which led to his taking an active interest in several literary clubs of London, and made him the moving spirit in the founding of the British Ornithologists' Club in 1902, of which he became the editor of its 'Bulletin.' He was a constant attendant at its meetings, and was present, in apparently his usual health and good spirits, at the last meeting of the Club preceding his death, held December 16, 1909. In returning to his home he was seized with a chill, "and next day took to his bed, pneumonia and other complications supervened, and the end came early on the morning of the 25th."

Although of robust constitution, he suffered in his later years from impaired health, due to excessive application for so long a period to official and literary work. He was a prominent participant in the meetings of the International Ornithological Congress, being Chairman of Section A (Zoölogy and Comparative Anatomy) at the Second Congress (Budapest, 1891), and President of the Fourth Congress, held in London, in 1905. He was, of course, elected to Honorary Membership in all of the principal ornithological societies of the world, and was one of the first ornithologists thus honored by the American Ornithologists' Union, at its first meeting in 1883.

"Sharpe was a man of remarkably wide and varied sympathies and interests. He was above all intensely human, and enjoyed life to the full. His keen sense of humour, his overflowing good nature, his love of pure fun, almost boyish to the last, his buoyant spirits, all combined to give him an irrepressible optimism that must have often stood him in good stead in the stern battle of life in which he had to take his full share, fighting against heavy odds

the greater part of his life."[1] He was, as has been said by one of his compeers, a self-made man in the best sense of the word. His monument is the Department of Birds in the British Museum, the British Museum 'Catalogue of Birds,' and his 'Handlist of the Genera and Species of Birds.'

Dr. Sharpe was married in 1867, and leaves, besides his widow, a family of ten daughters.

Dr. Sharpe's death is a great loss to science, and an almost irreparable one to the British Museum Department of Birds, which has acquired its preëminent rank among the great ornithological collections of the world mainly through his efforts; while his long series of contributions to the literature of ornithology will be his enduring memorial to the end of time.

NOTES ON SOME OF THE RARER BIRDS OF WASHTENAW COUNTY, MICHIGAN.[2]

BY N. A. WOOD AND A. D. TINKER.

THE writers have found in their work in Washtenaw County that the present status of certain species of birds that inhabit the region is not known or is different from what has been recorded. Our object in this paper is to give a summary of the occurrence of these forms at the present time, as it appears from our notes and the specimens in the University of Michigan Museum.

A. B. Covert's [3] list of the birds of Washtenaw County, and A. J. Cook's [4] list of Michigan birds (Washtenaw County records from Dr. J. B. Steere) give the only general summaries of the occurrence of the species in the County, and will be frequently referred to. The miscellaneous notes on the subject that have appeared in the literature will be cited in the text.

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[1] Fagan, *l. c.*, p. 283.
[2] From the University of Michigan Museum.
[3] Covert, A. B. Birds, in History of Washtenaw County, Chicago, 1881.
[4] Cook, A. J. Birds of Michigan. Bull. 94, Mich. Agri. Exp. Sta., 1893.

Sterna hirundo. WILSON'S TERN.— In Cook's list of Michigan birds, this species is not given from Ann Arbor, but A. B. Covert in 1881 recorded the species as "A common migrant." Since that time the records of its occurrence here have been very meager, only three previous to 1905. The only specimen from Ann Arbor in the Museum was taken May 16, 1891. From 1905 to the present time it has been seen every year, migrating up the Huron River. Our earliest spring record is that of April 12, 1908, when 13 were observed at Fourmile Lake. The latest spring record is that of May 23, 1903, when seven were recorded at Portage Lake by Wood. It is possible that the species may breed around some of the lakes of the County, as one was noted at Portage Lake on June 27, 1909, but of this nothing positive has been ascertained. Our earliest fall record is September 1, 1908.

Hydrochelidon nigra surinamensis. BLACK TERN.— Covert apparently found the species quite abundant for he gives it in his list as "Migrant, quite common." Since that time, however, we can find but few records for this vicinity. Wood took a fine specimen near Saline, Washtenaw Co., on May 19, 1892, and May 21, 1903, he recorded them at Portage Lake. May 19, 1907, one was observed migrating up the Huron River toward Portage and Zukey Lakes. June 27, 1909, Mr. Wood noted a pair at Portage Lake. They have occasionally been seen during the summer about Bass Lake, just to the northeast of Portage, and may possibly breed in the extensive marshes about that lake.

Mareca americana. BALDPATE.— In 1881, Covert speaks of the species as a "Common migrant." However for the past thirty years there have been but very few records for the County. In the Museum collection there is a specimen labelled "Ann Arbor, spring 1886, M. M. Bigelow." Two fine specimens — a male and female — were taken by Edward Campbell at Pleasant Lake on April 17, 1909.

Spatula clypeata. SHOVELLER DUCK.— Covert gives the species in his list as "Summer resident." Dr. J. B. Steere in Cook's list says "A questionable summer resident." Since 1881 we have had very few records and the species is certainly rare here at the present time. It has not been known to breed within the County during the past fifteen years. It is questionable whether the species should

ever have been classed as a summer resident. Our earliest spring record is April 8 (1888) and the latest April 20 (1899). Our only fall record is the single bird noted by Mr. Wood, on a small pond southeast of Ann Arbor, October 1, 1907. In 1908, the species was recorded at Fourmile Lake on April 12 and in 1909 on March 27.

Aix sponsa. WOOD DUCK.— Covert speaks of the species as a "Summer resident, not rare." Subsequent records show that this beautiful species, although not as common of late, has still been able to withstand the persecution of gunners to such an extent that a few pairs still breed in suitable localities along the Huron River. Our earliest spring record is February 17 (1890). On April 15, 1909, a fine male was caught in a trap set for muskrats, and on April 25 a female with a brood of young was seen on the Huron River not far from Ann Arbor.

Marila collaris. RING-NECKED DUCK.— In the 'Birds of Michigan' Cook gives the species as a "Rather common migrant" but of late years very little mention has been made of it in the literature. In Michigan, as well as in Ohio, it seems to be a rather rare migrant. Covert speaks of it as a "Common migrant in the County," but we have only one authentic record for this vicinity, and that is an adult male, taken on the Huron River near Geddes, March 20, 1909, by F. Novy. In the Museum are three specimens labelled, "S. E. Mich.— coll. Dr. Sager, Nat. History Survey of 1837–8," but it is not certain whether these were taken here or in adjacent counties.

Tympanuchus americanus. PINNATED GROUSE.— This species was formerly common near Ann Arbor but during the years 1880–1890 became nearly extinct within the County. Of late, however, owing to protective laws, it is on the increase, and may become fairly abundant again. On April 4, 1909, the writers noted the species at Fourmile Lake, where conditions are very favorable for its continued increase.

Asio flammeus. SHORT-EARED OWL.— Covert gives the species as "A very abundant resident," and Steere says, "Not rare at Ann Arbor" (Cook's list). We have several records of the occurrence of the species between December 1 and April, but only one for the summer months. On June 24, 1907, a brood of four young just able to fly was found in a big marsh in the old "drainage channel"

five miles southwest of Ann Arbor. Three of these were secured and one is now preserved in the Museum. April 4, 1909, a small flock of five was observed in an extensive marsh at the north end of Fourmile Lake in this County. It is quite possible that the species is a regular breeder, but we lack the necessary data to make this certain.

Archibuteo lagopus sancti-johannis. AMERICAN ROUGH-LEGGED HAWK.— Covert apparently found the species rather common in 1881, as he speaks of it in his list as "Very common in the fall." Our present knowledge of the species, however, would hardly permit us to make such a statement, as upon investigation we have been able to find but few records for the County. January 22, 1888, Wood caught one in a trap; on March 20, 1899, a fine specimen was taken near Ann Arbor in a trap; one was shot on March 15, 1897, and on October 30, 1909, W. Ransome secured a beautiful specimen just north of the city. Judging from the apparent scarcity of records it can safely be stated that the species is a rare and irregular visitant in the County, being most often noted in the winter and early spring months.

Falco columbarius. PIGEON HAWK.— A rare migrant at all times within the County; but few records have been secured. One was taken near Ann Arbor on March 1, 1896, and a fine male on October 19, 1890. On November 5, 1900, a beautiful female was taken about four miles south of Ann Arbor and presented to the Museum. Covert considered the species to be a rare migrant in 1881, and recent observations confirm his opinion.

Centurus carolinus. RED-BELLIED WOODPECKER.— Covert gives the species as "Very common, breeds in heavy timber." Since the above was written a large portion of our heavy timber has been removed, and, as our records show, the species is in consequence fast becoming a rare one in the County. But nine records have been secured in the last twenty years, and these are as follows: June 1, 1896, Wood noted a pair in heavy woodland west of Ann Arbor; May 1, 1896, a pair was noted northeast of the city. On November 28, 1902, E. H. Frothingham secured a male. May 6, 1905, Wood took a male just east of Ann Arbor, April 1, 1906, it was noted about two miles west of town. March 31, 1907, O. McCreary found one five miles west of Ann Arbor. April 11, 1909, one was noted in heavy timber along the Huron River below Geddes Station.

Nuttalornis borealis. OLIVE-SIDED FLYCATCHER.—This species is not mentioned from Ann Arbor in Cook's list, but there is, in the Museum collection, a pair that was taken here May 28, 1896, by A. B. Covert. Other records are May 1, 1903 (Wood), and June 6, 1907, May 18 and 29, 1908 (Tinker). Our only fall record is that of a single bird noted in one of the cemeteries of the city, on October 7, 1908. The species is far from common during either migration, and may be considered rare at all times.

Empidonax virescens. GREEN-CRESTED FLYCATCHER.—In 1881 Covert considered the species to be a rare summer resident. At present it cannot be looked upon as anything but a rare migrant for this vicinity, our records not warranting us in classing it as a summer resident. The only records that we have are, one taken on May 27, 1869, by W. Harrington and one secured on May 15, 1896, by D. C. Worcester.

Spinus pinus. PINE SISKIN.—In Cook's 'Birds of Michigan,' Steere gives the Pine Siskin as "Rare at Ann Arbor," while A. B. Covert, in 1881, says of it, "Winter visitant from the north." Since 1893 it seems to have become more common during both migrations, as it was fairly abundant in the spring of 1907, from May 17 to 24, while in the spring of 1908 it was recorded on May 9 and 10. In the fall of 1908 Pine Siskins first made their appearance at Ann Arbor on September 26, and continued abundant up to November 8, disappearing on the 15th: during the latter part of September and, October 1, they were frequently observed feeding on the aphids which infested the shade trees of the city. On January 13, 1909, three were observed within the city, and during the spring they were noted about the city from May 6 to 23. They were most often seen in small bands of a dozen or more individuals about coniferous trees.

Passerculus sandwichensis savanna. SAVANNAH SPARROW.—Covert gives the species as "A common migrant" in his list of 1881, but since that time our records show that it is far from common here, especially in the fall. A female was taken at Ann Arbor on May 12, 1905, and on April 28, 1907, a male was taken and a number of others noted, south of town. This year — 1909 — it was more common, an adult male being secured on April 14 and other specimens on May 4 and 19. Up to date we have no fall records

Ammodramus henslowi. HENSLOW'S SPARROW.— Covert gives this sparrow as "A very rare summer visitor." There is a specimen in the Museum labelled "Ann Arbor, May 26, 1894, ad. female, collected by A. B. Covert." Since that time the species was not recorded from this locality until April 18, 1909, when a fine adult male was found dead at Ypsilanti. On May 1, 1909, Mr. Wood was fortunate enough to secure a female just east of Ann Arbor, and on May 31, 1909, a singing male was found in a partially drained marsh west of Ann Arbor. Diligent search was made for a nest of the latter but none could be found, although the bird gave every evidence of having one in the vicinity, and seemed loath to leave the locality. More extended field work may show the species to be more common than seems to be the case at present.

Cardinalis cardinalis. CARDINAL.— In Cook's list (1893), we find the statement by Dr. Steere "never seen at Ann Arbor," and it is not given in Covert's list of 1881. The first record that we have of its occurrence here is on June 14, 1884. On May 24, 1903, a nest with one egg was found near Ann Arbor, and since that year the species has gradually gained a foothold, until at the present time it may be said to be a permanent resident. The Cardinal is one of those species that has apparently gradually extended its range from the south, and will in the future become more common where it has heretofore only been known as an accidental visitant. Other breeding records were secured in May, 1905, and on May 8, 1909.

Stelgidopteryx serripennis. ROUGH-WINGED SWALLOW.— Covert does not mention this swallow in his list, but since that time the species seems to have been gaining a foothold in the County, although still rare as a migrant and summer resident. Our earliest spring record is that of April 23, 1906. On May 13, 1905, Wood found a pair nesting with a colony of Bank Swallows and secured the male. In 1906, it was first recorded on April 23, and in May was found breeding alone in a small gravel-pit near Ann Arbor. On May 10, 1907, a pair was found nesting in the same pit as above. During the spring migration of 1908 the species was fairly abundant from April 29 to May 15. On May 1, 1909, Wood noted a flock of twelve down the Huron River, and from that date to the middle of May it was fairly abundant, apparently being held

here on the migration by the severe weather. May 28, 1909, a pair was found nesting in company with Bank Swallows.

Lanivireo solitarius. BLUE-HEADED VIREO.— Although in Cook's list (1893) the species is not mentioned from Ann Arbor, Covert (1881) speaks of it as "A not common migrant," and since that time but few records have been secured. Our earliest spring record is May 2, 1905. On May 10, 1901, Wood and J. Ricks each secured specimens. The species was again noted in 1903, on May 10 and 30, while in 1906 three were recorded on May 4, and on September 26 of the same year Wood secured a specimen at Portage Lake. It was recorded on May 9 and 14, 1907, and May 6 and 7, 1909. On the latter date a fine male and female were noted. Although occasionally observed in the fall, as on October 7, 1908, and September 26 and October 17, 1909, most of our records are for the spring migration and are confined to the first two weeks of May. From the foregoing it can readily be seen that the species apparently has not increased to any extent since 1881, and, although a more or less regular migrant through here, is far from common at any time.

Dendroica tigrina. CAPE MAY WARBLER.— Our earliest record of the taking of the species within the County is the female in the Museum collection, taken in the fall of 1869 by W. Harrington. It seems to be somewhat irregular in its occurrence here, for while in some years it is fairly common, in others it is apparently entirely absent. In 1907 the Cape May was far from common both in the spring and fall, but in 1908 several were seen and taken between May 15 and 18. In 1909, the species first made its appearance on May 6, and remained until May 23. In the spring, males seem to be the more numerous, while in the fall females and immature birds outnumber the adult males three to one. During the fall of 1908, the species was remarkably abundant, first appearing on September 9 and remaining until September 27, the majority being either females or immature birds.

Dendroica cerulea. CERULEAN WARBLER.— Covert gave this warbler, in 1881, as "A very common summer resident, breeds; nesting in the tops of tall trees." Since that date we have found them very irregular and local in their occurrence; some years none at all being seen. In 1903, Wood found several nests, but the next

year he was not able to locate one, although the same territory was thoroughly searched. In 1908, the species appeared to have returned in some numbers, as it was recorded on May 16, and on May 24 a number were found in full song, in a heavy swamp about seven miles west of Ann Arbor. The spring of 1909 found the species present, but only in limited numbers. On July 20, 1909, F. Novy took an immature bird near here, a few others being noted at the same time. In all probability the decrease in the number observed may be attributed to the destruction of the heavier timber which apparently forms a prominent factor in the environmental conditions preferred by this warbler.

Dendroica castanea. BAY-BREASTED WARBLER.— Covert considered the Bay-breasted Warbler as not very common, but in recent years it seems to be fairly common during the migrations, especially in the fall. Our earliest spring record is that of May 3, 1905, and one was taken as late as June 6 (1908). In the fall it has been taken here as early as September 5 (1896) and as late as September 30 (1905). In 1907, the species was quite common, first making its appearance on May 13, and remaining until June 6. As a general thing the males appear to be more abundant in the spring than the females, while in the fall the immature birds form the bulk of the migrants. In 1908, the Bay-breasted was quite common during both spring and fall, but especially in the fall, when they were the most abundant species present from September 27 to October 1. In the spring and fall of 1909, the species was not as common as in the previous year.

Dendroica striata. BLACK-POLL WARBLER.— Covert says of the Black-poll, "The last of our warblers to arrive in spring, when it comes in immense numbers." We have never found it common at any time, and it is only occasionally that the species is present in any numbers. In the spring of 1907, Black-polls came May 16, and were unusually common, remaining until June 6. Our earliest spring record is May 13 (1904) and the latest June 6 (1907). The spring of 1908 found the species fairly common, especially on May 18 when a number were observed, and they were with us from May 16 to 25. In the fall of that year they were even more abundant, being noted from September 9 to October 7, and in considerable numbers on September 27.

Dendroica dominica albilora. SYCAMORE WARBLER.— In 1881,

Covert wrote of this species as follows: "I cannot learn that this bird has ever been shot in the County, still I have taken it in other portions of the State and I think that it will yet be detected here." This prophecy eventually came true for on April 22, 1906, a fine male in full song was noted in a grove of sycamores along the Huron River, about half way between Ann Arbor and Ypsilanti (Tinker). On April 25, 1906, Wood took a fine male in the same locality, and noted the species again on April 26 and 29. The species in all probability bred here at that time for it was still present on May 6, but we were unable to locate nests. Wood has a specimen taken near Ypsilanti on May 17, 1893, by Van Fossen. Although diligent search was made for the species in 1907, nothing was seen of it, but in 1908 a male in full song was noted in the same locality as the others noted above, on April 26, and again, on April 29, Wood noted two here, securing one for the Museum. The species was noted in song on June 21, 1908, but no breeding records were obtained.

Dendroica vigorsi. PINE WARBLER.— Covert says of this species "Rare summer resident in this County." There is no question as to the rarity of the Pine Warbler here at the present time, but we doubt if it ever bred within the County, as we have not been able to find any record to support Covert's statement. Our records for the occurrence of the species are as follows: On April 28, 1898, Wood secured a fine male — now mounted in his collection. For 1907 there are several records: Wood first detected the presence of the species on April 26, when he secured an adult male; on April 27 he took another specimen, and on May 2 a male and female were noted feeding in the coniferous trees in one of the cemeteries of the city. The male of the last named pair was in full song at the time.

In 1908 the species was first recorded on April 23, when three were noted, but it was also observed on April 24. More were noted in the spring of 1909 than in any previous season, the species first being observed on May 1 and afterwards on May 4 and 11. Nearly all of the records secured in the spring have been of adult males in full song. The apparent scarcity of the Pine Warbler here is no doubt due to the lack of a suitable environment, as the County is almost devoid of the natural coniferous growths preferred by this species.

Dendroica discolor. PRAIRIE WARBLER.— In 1881, Covert found the species a rare one in the County, as it is at the present time. On May 10, 1901, a beautiful female was secured two miles east of Ann Arbor, at the edge of a large brush pile in an apple orchard. On May 9, 1903, a fine male was taken at the edge of a tamarack swamp, and on May 2, 1905, two males were secured in hazel brush on the banks of the Huron River below Ann Arbor. The species was recorded but once in 1906 — May 4 — but in 1907 it appeared to be more numerous, although far from common. In that year it was first noted on May 12, when one was found in a large apple orchard east of town and another in a brushy lot in the same general locality, and again on May 13 (adult male), 14 (female) and 15 (female). The only record for 1908 was that of one specimen noted in the vicinity of Ypsilanti on May 16. In the season of 1909 four records for the species in this vicinity were secured; the first on May 11, and the others on May 12, 16, and 18. On all four of these occasions the birds were found in full song.

Seiurus motacilla. LOUISIANA WATER-THRUSH.— Covert apparently found this Water-thrush rather common, as he wrote in 1881 as follows: "A very common summer resident, breeding in swampy timberlands." Our experience with the species certainly does not bear out this statement, as we have found it only as a rare summer resident and migrant. On May 8, 1896, the species was found breeding near South Lyon, by Covert and Wood, and this seems to be the only breeding record for the County. On June 16, 1906, an adult male was found dead on the college campus. The testes in this individual were well developed showing that it was possibly a breeding bird. Of late years it has been recorded nearly every spring, as May 12, 1904, May 10, 1905, May 6, 1907, and April 26, 1908. But up to 1909 these are the only records we have, with the exception of the single bird taken by Wood on August 15, 1905. In 1909, the species seemed to be more common, as it was frequently noted in full song from April 28 to May 16.

Oporonis agilis. CONNECTICUT WARBLER.— In regard to the presence of this species in the County, in 1881, Covert says: "I have secured one specimen in this County — May 17, 1880." We have always found it a rare spring migrant and a very rare fall migrant here, in fact our only fall record seems to be that of an

adult male taken in the vicinity of Ann Arbor on September 9, 1896. In 1906, the species was noted but once, on May 2. In 1907 it was first observed on May 18 and 19, but on May 30 two specimens were taken, and on May 24, 31, June 2 and 9 single birds were seen. In 1908, it was recorded but once, May 17, and in 1909 not at all. From the foregoing it may be seen that the species is apparently somewhat more common than when Covert collected in this vicinity, but that it is still far from abundant.

Oporonis philadelphia. MOURNING WARBLER.— For the past five years we have found the Mourning Warbler fairly common during the spring migrations. In 1881 Covert looked upon the Mourning Warbler as rare in this County, as shown by the following statement: "This handsome bird is rare in the county, I have records of but three specimens." Several have been taken between 1902 and 1909, but in the season of 1907 they seemed to be particularly abundant. On May 28, 1907, four were noted in the vicinity of Ann Arbor, two males being secured at that time. On May 31, 1907, Wood took two near the Huron River below Ann Arbor. In 1908 and 1909, only single records were secured — May 24 in the former year and May 25 in the latter.

Icteria virens. YELLOW-BREASTED CHAT.— In Cook's list (1893) Steere is quoted as stating that the species had not at that time been observed at Ann Arbor, and Covert does not mention it in his list. On May 20, 1896, Covert in company with Dr. R. Wolcott and P. A. Taverner, found the species in song in an extensive swamp southwest of Ann Arbor. Several were seen on this date and five secured. In 1903, Mr. Covert wrote of the presence of the species in Washtenaw County as follows: "Dr. R. H. Wolcott and the writer found them very common in May, 1893, at various places and secured a fine series of specimens; these were taken about four miles south of Ann Arbor, Washtenaw Co. Again in the same locality in company with Prof. Dean C. Worcester on May 4th, 1895, I secured a pair (male and female) which were nesting." (Bull. Mich. Orn. Club, 1903, p. 60.)

From 1896 to 1906 nothing seems to have been recorded regarding the species, but on May 16, 1906, an adult male was taken by Wood in the same general locality as the above. On June 28, 1909, the species was heard singing by Wood in the same swamp, and

was again noted on July 3, 1909, by F. Novy. It is quite possible that the Chat bred in this vicinity in the summer of 1909, but of this we have no definite evidence.

Wilsonia pusilla. WILSON'S WARBLER.— Covert says of this species, "Very common during spring and fall, some remain with us all summer." Our present records certainly do not confirm this statement, and we very much doubt if the species was ever a summer resident here. At the present time it is a rare migrant both in spring and fall, but is much more so in the fall. Our earliest spring record is May 11 (1904). In 1903, the species was recorded on May 22, when J. J. Ricks secured a fine male at Portage Lake. On May 11, 1904, Wood secured a male in a swamp east of Ann Arbor, and noted another in the same locality on May 12. In 1906, but one record was secured — May 17.

In 1907, the species was unusually abundant. It first made its appearance on May 28, and continued with us in varying numbers up to June 9, being noted almost daily between these dates. In 1908, it was about normally abundant, being first recorded on May 15 and remaining until the 19th. In 1909, the species was first noted on May 18, and on the 19th Wood found it quite abundant along the river: it was observed in limited numbers until May 23.

Our only fall records are September 8, 1907, and October 7, 1908. From the foregoing, it can readily be seen that the species is much less common in the fall than during the spring migration. Moreover it is very local in its occurrence here; never being found far from water.

Wilsonia canadensis. CANADIAN WARBLER.— Of this warbler Covert says, "A very common migrant, frequently remaining all summer." We have never found the Canadian Warbler in summer, although it has been observed late in May and occasionally is rather common at that time. However, the species is not generally distributed over the County during the migrations, but rather local, so we may have overlooked it.

Our earliest spring record is that of May 1 (1888) and our latest June 2 (1907). In the spring of 1907, the species was with us from May 13 to June 2, and was unusually abundant during the entire period. In the spring of 1908, it was first noted on May 11, and continued with us in limited numbers up to May 18. In 1909, it

was present from May 6 to 27, but was not at all common at any time during the migration. Our fall records are very limited; the only ones which we have been able to find are those of September 3, 1909, and August 23, 1908.

Thryothorus ludovicianus. CAROLINA WREN.— Covert considered the Carolina Wren in this vicinity as a very rare straggler from the south, and knew of but one record for the County — a female taken in a store at Ann Arbor, December 14, 1890. As far as we have been able to ascertain no further records were secured until June 6, 1909, when a male in full song was noted, and on June 20 a nest with five young was found near Ann Arbor (Auk, XXVI, p. 434). In Cook's list the species is recorded from Lenawee County (A. H. Boies), and Jerome Trombley is quoted as finding a nest in Monroe County in 1892, so that it is not at all surprising that the species should extend its range a little further north into this county. Whether or not it will eventually establish itself here as a permanent resident remains to be seen.

Bæolophus bicolor. TUFTED TITMOUSE.— In Cook's list, the Tufted Titmouse is given as a regular winter resident at Ann Arbor (on the authority of Steere), but Covert does not mention it in his list of 1881. Although it may have been a regular winter resident at the time when Steere wrote the above, it certainly is not so at the present time. During the fall and winter of 1903, the species appeared to be fairly common, as J. J. Ricks noted a flock at Portage Lake, and it has been noted several times in the vicinity of Ann Arbor on December 13, 1900, February 7, 21, and March 13, 1904. On March 24, 1907, a single specimen was noted west of Ann Arbor. A breeding record was secured for this locality on May 24, 1908 (Auk, XXV, p. 322), and in the fall of the same year — October 25 — a pair was observed in the City.

BIRD NOTES FROM SALIDA, CHAFFEE COUNTY, COLORADO.

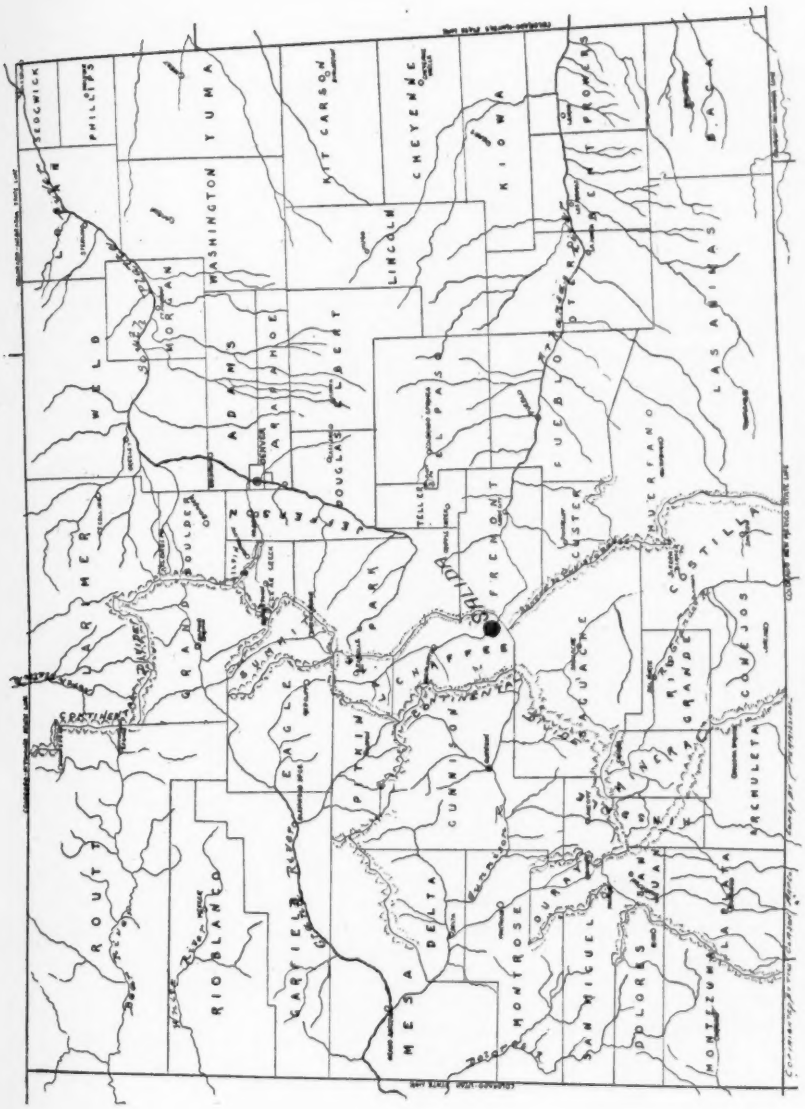
COMPILED FROM THE MEMORANDA OF JOHN W. FREY.

BY EDWARD R. WARREN.

MOST of the matter in the following pages is from notes taken by Frey in 1908, when he did a considerable amount of collecting at Salida, and a small portion is from notes taken by myself in two visits made in January in 1907 and 1908, and when passing through in June, 1909. As Frey has removed from Salida to Oregon, and there is no one else doing bird work in that region at present, I have thought it advisable to put his notes in such shape that they would be available for future workers in that field.

Salida is situated, as the map shows, near the southeastern border of Chaffee County, and somewhat south and east of the geographical center of the State of Colorado. The town is on the Arkansas River, just above its junction with the South, or as it is usually called in that vicinity, the Little Arkansas; the elevation as given by the railroad is 7,050 feet. To the westward is a wide level valley or park, but immediately to the east the valley narrows, and is not much more than wide enough for the river, wagon road, and railroad.

This large valley is bounded on the south by the Sangre de Christo Range, and on the west by the Continental Divide, and eastwardly by a range of lower mountains or hills. Not far from the town to the north and south the foothills begin, covered at first with piñons and cedars, and changing as the elevation increases, to Douglas spruce, aspens, yellow pines, Engelmann's spruce, and finally, on the higher peaks, timberline is reached. A number of these peaks in the Continental Divide are over 14,000 feet elevation. Sometime, when either the whole of Chaffee County shall have been studied by ornithologists, or even that portion from Salida to the summits of the ranges in the immediate neighborhood, we will have a very interesting list of birds. To be sure, Colorado contains a number of counties similarly situated, and whose bird life has been



MAP OF COLORADO, SHOWING POSITION OF SALIDA.

studied but little. Lake County, which joins Chaffee on the north, and within whose boundaries the main headwaters of the Arkansas take their rise, is entirely above 9,000 feet altitude, and would make an excellent well-defined area in which to study the life at the higher elevations, and it is to be hoped that some day some naturalist or student may be located in that county who can and will give it the study which it should have.

Frey's work was practically all done within a radius of from 2 to 3 miles from the town, in the open valley, among the first foothills, and along the South Arkansas. Outside of his work, and the trifle I have done myself, I know of no other done in the county, except a few notes by D. D. Stone, published in the 'Ornithologist and Oologist' in 1882, 1883, and 1884, and made about Hancock in the northwest part of the county. These, however, I have not seen myself. In this respect Chaffee County is like most of Colorado, a small portion of which, from Pueblo north to Denver, and thence northward to Boulder and Fort Collins, has been quite well worked, in some localities very thoroughly so, while the rest of the great area of the State has, to use a prospector's phrase, hardly been scratched. And thus it is with Chaffee County.

1. **Xema sabini**. SABINE'S GULL.— Two were taken near Salida, Sept. 26, 1908, one of which, an immature female, is now in the collection of Colorado College. This is quite a rare bird in Colorado, but a few records are added from year to year.

2. **Pelecanus erythrorhynchos**. WHITE PELICAN.— Three were seen April 25, 1909, by Arthur Haley, on the Arkansas River not far from Salida, and one was killed near the same place in the spring of 1908 and mounted by Frey.

3. **Anas platyrhynchos**. MALLARD.— One of the common ducks, but does not breed near Salida, and is seldom seen except in spring and fall. In 1908 made their first appearance March 27.

4. **Chaulelasmus streperus**. GADWALL.— The above remarks as to the Mallard apply equally well to this species. First noted in 1908 April 3.

5. **Nettion carolinensis**. GREEN-WINGED TEAL.— One of the common ducks; a few have been reported to Frey as breeding on the little Arkansas a few miles above Salida. First arrivals in 1908, March 27, and in 1909, February 11.

6. **Querquedula discors**. BLUE-WINGED TEAL.— Not common; Frey states that but few of this species come to this locality. First appearance in 1908, March 27.

7. **Querquedula cyanoptera**. CINNAMON TEAL.— Common in migration. First arrival for the year March 27, 1908.

8. **Spatula clypeata**. SPOONBILL.— Common in migration. In 1908 first noted April 24.

9. **Dafila acuta**. PINTAIL.— Common in migration. In 1909 the first were seen February 10.

10. **Marila affinis**. LESSER SCAUP DUCK.— Frey says that large numbers of this species came near Salida in the spring of 1908, the first arrivals being noted April 17, but that none were seen in the fall.

11. **Branta canadensis**. CANADA GOOSE.— One was killed March 30, 1908; it was not seen by Frey, he was told of it by the party who secured the bird, and it may have been one of the subspecies, either *hutchinsi* or *minima*. Geese of any species are rare at this locality.

12. **Botaurus lentiginosus**. BITTERN.— One taken April 16, 1908; one seen in captivity May 24, 1908. It is quite common in spring.

13. **Ardea herodias**. BLUE HERON.— Not uncommon in spring and fall. Quite a number were brought to Frey to be mounted in the spring of 1909. The first seen that year were on March 19.

14. **Egretta candidissima**. SNOWY HERON.— Frey thinks this species is a not uncommon spring and fall visitor. As a matter of fact it is not at all rare in Colorado; the taxidermists have a good many specimens brought to them for mounting. Mr. C. E. Aiken once told me that he no longer made any special note of those brought to him.

15. **Nycticorax nycticorax nævius**. BLACK-CROWNED NIGHT HERON.— Quite common in the spring.

16. **Nycticorax violaceus**. YELLOW-CROWNED NIGHT HERON.— The second specimen of this species recorded from Colorado, and the only one from the State now existing in any collection, and of which we have definite data, was taken on the Arkansas River, one mile north of Salida, May 1, 1908. Frey purchased the bird from a boy whose father killed it from a flock of five, and immediately after buying this specimen he went out to see if he could find the others, but was unsuccessful. The bird was a female. It is now mounted, and in the collection of Colorado College, at Colorado Springs. I recorded this find in 'The Condor,' XI, p. 33, Jan., 1909.

17. **Rallus virginianus**. VIRGINIA RAIL.— Taken near Salida in May, 1908.

18. **Porzana carolina**. SORA.— Frey took specimens in May, 1908. He thinks it may breed in the region as he has found it there the latter part of July.

19. **Fulica americana**. COOT.— Frey has mounted specimens taken near Salida.

20. **Steganopus tricolor**. WILSON'S PHALAROPE.— Seven seen near Salida, May 4, 1908.

21. **Recurvirostra americana**. AVOCET.— Two were taken near Salida, September 26, 1908, and mounted by Frey.

22. **Gallinago delicata**. WILSON'S SNIPE.— Small bunches wintered in a marshy spot close to the town in 1907–8, and 1908–9.

23. **Pisobia minutilla**. LEAST SANDPIPER.— Seen the last of April, 1908.

24. **Helodromas solitarius cinnamomeus**. WESTERN SOLITARY SANDPIPER.— Several were taken by Frey, March and April, 1908. His notes say they were numerous the last of April, that they are quite common in spring, but rare in autumn.

25. **Actititis macularia**. SPOTTED SANDPIPER.— Common in summer along the streams, and breeds. First arrival for 1908, May 5.

26. **Numenius longirostris**. LONG-BILLED CURLEW.— Frey considers this species rare at Salida; he saw five April 29–30, 1908.

27. **Oxyechus vociferus**. KILLDEER.— Common in migration, and a number spend the summer and breed. First arrival for 1908, March 15.

28. **Zenaidura macroura carolinensis**. MOURNING DOVE.— A common summer resident and breeder. Arrived April 24, 1908, and about April 21, 1909.

29. **Accipiter velox**. SHARP-SHINNED HAWK.— Frey does not consider this species particularly common, though it occurs in the region.

30. **Accipiter cooperi**. COOPER'S HAWK.— Frey has seen only one, taken May 4, 1908. He says it was making a meal from a small bird when shot.

31. **Accipiter atricapillus**. GOSHAWK.— A not uncommon winter visitor.

32. **Buteo borealis calurus**. WESTERN REDTAIL.— A common summer resident. First arrival in 1908, February 24.

33. **Buteo swainsoni**. SWAINSON'S HAWK.— One was taken near Salida in the spring of 1909.

34. **Aquila chrysaëtos**. GOLDEN EAGLE.— Occasionally seen in the valley in the winter, the nearest locality to Salida from which Frey has had a specimen being Poncha Springs, 5 miles distant.

35. **Falco sparverius**. SPARROW HAWK.— A common summer resident and breeder. Arrives early in the spring, sometimes by the middle of February.

36. **Pandion haliaëtus carolinensis**. OSPREY.— Three were seen 2 miles west of Salida, April 25–29, 1908.

37. **Asio wilsonianus**. LONG-EARED OWL.— Frey has mounted a specimen taken near Salida.

38. **Asio flammeus**. SHORT-EARED OWL.— Frey has mounted a specimen taken near Salida.

39. **Nyctala acadica**. SAW-WHET OWL.— One was taken at Salida, December 7, 1908.

40. **Bubo virginianus pallescens**. WESTERN HORNED OWL.— Quite plentiful in the piñons and cedars close to Salida.

41. **Glaucidium gnoma**. PIGMY OWL.— Frey told me of four specimens of this little owl being killed near Salida the winter of 1907–8.

42. **Ceryle alcyon**. BELTED KINGFISHER.—Not uncommon along the streams in summer. Made its first appearance in 1908, April 16.

43. **Dryobates villosus monticola**. ROCKY MOUNTAIN HAIRY WOODPECKER.— Resident: fairly common.

44. **Colaptes cafer collaris.** RED-SHAFTED FLICKER.— A common summer resident and breeder; a few winter.

45. **Chordeiles virginianus henryi.** WESTERN NIGHTHAWK.— A common summer resident and breeder.

46. **Selasphorus platycercus.** BROAD-TAILED HUMMINGBIRD.— A summer resident. In May, 1908, the first were seen on the 17th.

47. **Tyrannus tyrannus.** KINGBIRD. Has been taken at and near Salida, and is probably not at all uncommon. First of season seen May 15, 1908.

48. **Tyrannus verticalis.** WESTERN KINGBIRD.— A common summer resident.

49. **Sayornis saya.** SAY'S PHŒBE.— A common summer resident and breeder; first bird for 1908 seen April 9.

50. **Myiochanes richardsoni.** WESTERN WOOD PEWEE.— A summer resident. First seen in 1908, May 18.

51. **Empidonax trailli.** TRAILL'S FLYCATCHER.— A summer resident, breeds, and is rather common. First appeared in 1908, May 17.

52. **Empidonax hammondi.** HAMMOND'S FLYCATCHER.— Frey took one May 21, 1908; he says they nest quite commonly at Salida.

53. **Otocoris alpestris leucolæma.** DESERT HORNED LARK.— Permanent resident and breeder. Probably more abundant in winter than in summer.

54. **Pica pica hudsonia.** MAGPIE.— Common permanent resident and breeder.

55. **Cyanocitta stelleri diademata.** LONG-CRESTED JAY.— A common breeder in the foothills and mountains near the town. In winter often come into the town to feed on whatever they can find.

56. **Aphelocoma woodhousei.** WOODHOUSE'S JAY.— A summer and winter resident, but not particularly common.

57. **Corvus corax sinuatus.** NORTHERN RAVEN.— I saw one near Salida, in January, 1908.

58. **Corvus brachyrhynchos.** CROW.— Frey thinks Crows are found at Salida. I have seen them from the train several miles east of there.

59. **Nucifraga columbiana.** CLARK'S CROW.— Rather common in the piñons and cedars in winter, and higher up in summer.

60. **Cyanocephalus cyanocephalus.** PIÑON JAY.— A common resident in the piñons and cedars in the foothills.

61. **Dolichonyx oryzivorus.** BOBOLINK.— Frey saw ten birds May 14, 1908, and secured four of them; these were all males. This is a new locality for the State.

62. **Xanthocephalus xanthocephalus.** YELLOW-HEADED BLACKBIRD.— A migratory visitor; Frey does not know of its breeding, though he has seen considerable numbers in spring.

63. **Agelaius phœniceus fortis.** THICK-BILLED REDWING.— Summer resident, and breeds, but not in any great numbers. First arrivals March 10, 1908, and March 24, 1909.

64. **Sturnella neglecta.** WESTERN MEADOWLARK.— A common summer resident and breeder. First arrivals March 3, 1908, and March 11, 1909.

65. **Icterus bullocki.** BULLOCK'S ORIOLE.— A not uncommon summer resident, breeding at Salida.

66. **Euphagus cyanocephalus.** BREWER'S BLACKBIRD.— A very common summer resident, "nesting and raising young in every bush or willow patch, usually around swamps" (Frey).

67. **Hesperiphona vespertinus montanus.** WESTERN EVENING GROSBEAK.— Frey saw two in Salida in January, 1908.

68. **Carpodacus cassini.** CASSIN'S FINCH.— A winter resident or visitor breeding somewhat higher in the mountains in the neighborhood. Frey says he saw but few of these birds about Salida the winter of 1908–9 which was unusually severe.

69. **Carpodacus mexicanus frontalis.** HOUSE FINCH.— A common summer resident and breeder about the town, but does not spend the winter there as it does at the lower altitudes.

70. **Loxia curvirostra stricklandi.** MEXICAN CROSSBILL.— A small flock was seen in the winter of 1908–9.

71. **Leucosticte tephrocotis.** GRAY-CROWNED ROSY FINCH.— Rosy Finches were unusually abundant about Salida the winter of 1908–9, which, as stated above was very severe, and especially so in the higher mountains where these birds usually stay. Frey says in his notes: "Thousands of these birds were here at all times during the winter. Every snow that came would drive them down to the valleys; when the south hills became bare they would split up in small bunches and scatter and climb up as the snow receded. I have taken all four varieties from a single bunch, and might say at a single shot. They seemed to be all varieties together, and the Gray-crowns were most plentiful, with Brown-caps a close second, and about one in four or five would be Hepburn's, and a very few black ones. These birds fed almost entirely on the tumbleweed (Russian thistle) seeds, and their throats and crops were literally crammed with them."

72. **Leucosticte tephrocotis littoralis.** HEPBURN'S ROSY FINCH.— As noted above, about twenty percent of the Rosy Finches taken by Frey were this form.

73. **Leucosticte atrata.** BLACK ROSY FINCH.— Only two or three of the large number of Rosy Finches taken by Frey were this species.

74. **Leucosticte australis.** BROWN-CAPPED ROSY FINCH.— While this species is a summer resident in this State above timberline, in winter it seems somewhat less numerous than the Gray-crowned, which is only a winter visitant. My own observations made elsewhere agree with Frey's on this point.

75. **Acanthis linaria.** REDPOLL.— Frey states that several flocks were about Salida the winter of 1908–9, feeding, like the Rosy Finches, on the tumbleweed seeds.

76. **Astragalinus tristis.** GOLDFINCH.— A resident; breeds, but is not very common.

77. **Astragalinus psaltria.** ARKANSAS GOLDFINCH.— Frey sent me a skin which is typical of the dark form formerly called *mexicanus*. The bird is no doubt a more or less common summer resident. Frey found a nest late in October containing small young birds.

78. **Spinus pinus.** PINE SISKIN.— Rather common in summer, and breeds. Frey speaks of their feeding on the seeds of the dandelion in the park and on the lawns of the town. I have seen the bird near the town in winter.

79. **Passer domesticus.** HOUSE SPARROW.— Abundant in the town.

80. **Pocœcetes gramineus confinis.** WESTERN VESPER SPARROW.— A summer resident, but Frey does not regard it as very common.

81. **Passerculus sandwichensis alaudinus.** WESTERN SAVANNAH SPARROW.— A common summer resident and breeder.

82. **Chondestes grammacus strigatus.** WESTERN LARK SPARROW.— A summer resident, not very common.

83. **Zonotrichia querula.** HARRIS'S SPARROW.— Frey took a female of this species December 15, 1908, adding another to the few records for this bird for Colorado.

84. **Zonotrichia leucophrys.** WHITE-CROWNED SPARROW.— Frey says: "It is a common summer resident and nests, and raises its young around the brush piles close to town."

85. **Zonotrichia leucophrys gambeli.** INTERMEDIATE SPARROW.—There were several skins of this subspecies among a lot which Frey sent me. It is no doubt common in the spring and fall during the migrations.

86. **Zonotrichia coronata.** GOLDEN-CROWNED SPARROW.— Frey took one April 19, 1908, this being the second record for the species for Colorado. I have already recorded this in 'The Condor,' XI, p. 83, Jan., 1909. Certainly Salida seems to be an excellent locality for collecting.

87. **Spizella monticola ochracea.** WESTERN TREE SPARROW.— A common winter resident.

88. **Spizella passerina arizonæ.** WESTERN CHIPPING SPARROW.— A common summer resident and breeder.

89. **Spizella breweri.** BREWER'S SPARROW.— Frey took several in the spring of 1908; it breeds in the region.

90. **Junco hyemalis connectens.** INTERMEDIATE JUNCO.— A winter resident; one of the less common of the Juncos.

91. **Junco mearnsi.** PINK-SIDED JUNCO.— Winter visitor; one of the most common Juncos.

92. **Junco phæonotus caniceps.** GRAY-HEADED JUNCO.— A winter resident, and probably breeds in the hills not so very far from the town. It is greatly to be regretted that these notes are not more complete as to the Juncos. Frey says as to their occurrence in the winter of 1908–9: "Thousands of these birds wintered here on the tumbleweed seed. There are several varieties, but I have never collected many and do not know just what they are."

93. **Melospiza melodia montana.** MOUNTAIN SONG SPARROW.— A summer resident, but not very common.

94. **Melospiza lincolni.** LINCOLN'S SPARROW.— Common in the migrations, and may breed not very far from the town.

95. **Pipilo maculatus montanus.** MOUNTAIN TOWHEE.— The summer Towhees are no doubt this subspecies; it is fairly common. In January, 1907, I saw Towhees among the cedars and piñons north of the town, but did not collect any, so do not know if they were *montanus* or *arcticus*, the latter being supposed to be the winter bird in Colorado, but as a matter of fact both forms occur in Colorado in winter.

96. **Oreospiza chlorura.** GREEN-TAILED TOWHEE.— A summer resident, breeding at the foot of the mountains near Salida, but most common during the migrations.

97. **Zamelodia melanocephala.** BLACK-HEADED GROSBEAK.— A common summer resident and breeder, arriving early in May.

98. **Calamospiza melanocorys.** LARK BUNTING.— A summer visitor, not common.

99. **Piranga ludoviciana.** WESTERN TANAGER.— Not very common, arriving about the middle of May, and breeding at a somewhat higher altitude than Salida.

100. **Hirundo erythrogaster.** BARN SWALLOW.— A very common summer resident and breeder, arriving about the middle of May.

101. **Iridoprocne bicolor.** TREE SWALLOW.— A common summer resident, coming late in April.

102. **Tachycineta thalassina lepida.** VIOLET-GREEN SWALLOW.— A common summer resident, arriving in middle of May.

103. **Bombycilla garrula.** BOHEMIAN WAXWING.— A winter visitant. Frey took specimens Nov. 29, 1908.

104. **Lanius borealis.** NORTHERN SHRIKE.— A winter visitant, not uncommon. Frey says that two or three followed the large flocks of Rosy Finches about, and must have killed a good many.

105. **Lanius ludovicianus excubitorides.** WHITE-RUMPED SHRIKE.— Arrives the very last of April or first of May, is rather common, but Frey does not think they breed, as he says he has never seen them in summer.

106. **Vermivora celata.** ORANGE-CROWNED WARBLER.— Taken early in May, 1908; should breed in the region, but Frey has no notes as to this.

107. **Dendroica æstiva.** YELLOW WARBLER.— A common summer resident and breeder, arriving about the middle of May.

108. **Dendroica coronata.** MYRTLE WARBLER.— Seen only in migration; in fact, Frey's notes are only for spring, when it arrived May 5 (1908), and was found in company with the next species.

109. **Dendroica auduboni.** AUDUBON'S WARBLER.— Common during the migrations, but probably they all breed at higher elevations.

110. **Oporornis tolmiei.** MACGILLIVRAY'S WARBLER.— Frey has seen only a few, in the spring.

111. **Geothlypis trichas occidentalis.** WESTERN YELLOWTHROAT.— A common summer resident and breeder, arriving the very last of April. Frey says it is about the commonest warbler in the region.

112. **Icteria virens longicauda.** LONG-TAILED CHAT.— Frey took this species in 1908.

113. **Wilsonia pusilla pileolata.** PILEOLATED WARBLER.— Arrives about the middle of May, and Frey says it is a common summer resident, dividing with the Yellow Warbler and the Yellowthroat the honor of being the most abundant of the warblers.

114. **Setophaga ruticilla.** REDSTART.— Frey took one, and saw another, May 17, 1908; these are all he has seen.

115. **Anthus rubescens.** PIPIT.— Sometimes abundant in migration.

116. **Cinclus mexicanus unicolor.** WATER OUSEL.— Not uncommon along the streams; resident, and a breeder.

117. **Oroscoptes montanus.** SAGE THRASHER.— Frey has taken it in the spring. I see no reason why it should not be a breeder in the region.

118. **Mimus polyglottos leucopterus.** WESTERN MOCKINGBIRD.— A rare visitor in spring and summer.

119. **Dumetella carolinensis.** CATBIRD.— A summer resident, coming about the middle of May; apparently not very common.

120. **Salpinctes obsoletus.** ROCK WREN.— A common summer resident and breeder.

121. **Troglodytes aëdon parkmani.** WESTERN HOUSE WREN.— A common summer resident, arriving about the first of May.

122. **Certhia familiaris montana.** ROCKY MOUNTAIN CREEPER.— Frey took one in February, 1909. Probably not an uncommon resident.

123. **Sitta carolinensis nelsoni.** ROCKY MOUNTAIN NUTHATCH.— A rather common resident.

124. **Penthestes gambeli.** MOUNTAIN CHICKADEE.— A common resident.

125. **Psaltriparus plumbeus.** LEAD-COLORED BUSHTIT.— Frey took this species at Salida, Dec. 14, 1908.

126. **Myadestes townsendi.** TOWNSEND'S SOLITAIRE.— Not uncommon, at least in winter. Salida is rather low for a breeding station for this bird, though one or two nests have been found at a much lower elevation in Colorado.

127. **Hylocichla ustulata swainsoni.** OLIVE-BACKED THRUSH.— Frey has seen but few near Salida.

128. **Hylocichla guttata.** ALASKA HERMIT THRUSH.— Seen only in the migrations. Frey found these birds exceedingly abundant after a severe storm which struck Salida, May 3, 1908.

129. **Planesticus migratorius propinquus.** WESTERN ROBIN.— A common summer resident and breeder, and a few remain during the milder winters. The spring migration begins between the first and middle of March.

130. **Sialia mexicana bairdi.** CHESTNUT-BACKED BLUEBIRD.— Arrives early in March, but does not seem to remain to breed.

131. **Sialia currucoides.** MOUNTAIN BLUEBIRD.— A common summer resident and breeder, arriving about the first of March.

AN APPARENTLY NEW SPECIES OF CARRION HAWK OF THE GENUS *IBYCTER*.

BY WILLIAM E. D. SCOTT.

Ibycter circumcinctus spec. nov.

Type, Princeton University Collection, No. 8993, adult male, Chubut, Territory of Chubut, Patagonia.

Size. Total length, about 24 inches; wing, 16.25 inches; tail, 10.30 inches; tarsus, 2.55 inches; culmen from front of cere, 1.30 inches; cere to forehead, 0.40 inch.

Color. General color black and white; black prevailing above, white prevailing beneath.

Forehead, lores, sides of head and crown deep velvety black; the feathers of the entire crown and top of head lanceolate and prolonged into a recurved crest on the occiput. Neck concolor with head on the top and sides; throat pure white; the black of the sides of the neck joined by a band of black below the white throat patch; the feathers of this band are not all pure black but some of them have one web largely encroached upon by white; *the effect is a band of black below the throat patch more or less variegated by white on some of the feathers; this band is about an inch in width*; lower part of the under neck pure white, the black of the sides of the neck confining the white of this region to a narrow area, widening into the pure white of the breast. Mantle and lower back black with a dull green gloss and some shading of deep brown; rump and upper tail-coverts pure white. Tail, base definitely white, the rectrices here having ivory white shafts; thence black prevails for seven inches, the shafts being shining black; a terminal white band about an inch and a half broad where the shafts of the rectrices are again ivory white. Seen from below the tail presents the same pattern, the colors all being duller. Wings above black with a dull undertone of deep brown and with dull green reflections glossing the darker shades; the upper wing-coverts as above except that the small feathers along the bend of the wing are in strong contrast, pure white; this feature is marked and when the wing is closed a half inch or more of white borders the radial portion of the bend; quills all black with a deep brown tone, both the primaries and secondaries being conspicuously tipped with pure white. Under wing-coverts and axillaries pure white. Lower parts. Chin and throat pure white, separated from the immaculate white of the breast by a broad band somewhat variegated with white markings on some feathers. The white on the lower throat is confined to the center, bounded by black on either side and widening to three inches on the upper breast, the black border reaching

well down on the sides anteriorly and defining the upper abdominal region; the rest of the lower surface, including the lower tail-coverts, pure white. Feet and tarsi deep yellow; the soles shaded with dull brown. Iris hazel brown. Bill yellow with a shading of blue close to the cere. Cere and naked skin of forehead orange with a strong carmine shading.

Geographical Range. So far as known the eastern part of Territory of Chubut or Chupat, Patagonia.

This carrion hawk, apparently heretofore undescribed, was received in an exchange of bird skins from the Museo La Plata in Buenos Aires. The bird is undoubtedly fully adult, and was taken near the settlement of Chubut in February, 1896. The original number is 8 and the bird was labelled *Ibycter americanus*. It is excluded from the group of this genus to which *americanus* belongs by the difference of the coloring of the under parts and tail. In certain respects it approaches *Ibycter carunculatus* but is much larger than that bird and from a widely remote district. The only other bird near it in coloration is *I. megalopterus*, with the throat, breast and chest black. This species, too, so far as known, is confined to the Pacific side of the Chilian Andes and perhaps encroaches upon extreme southern Patagonia to the eastward.

THE TAGGING OF WILD BIRDS: REPORT OF PROGRESS IN 1909.

BY LEON J. COLE.

AT THE meeting of the American Ornithologist's Union in Cambridge in November, 1908, the writer presented a proposition for the study of the migrations and other movements of wild birds by means of numbered bands, which should be placed around the birds' legs.[1] The great advantage claimed for this method was the accurate data that might be accumulated relative to the movements of individual birds. This work had already been attempted on a

[1] Cole, Leon J. The Tagging of Wild Birds as a means of studying their Movements. Auk, Vol. XXVI, No. 2, pp. 137–143, April, 1909.

small scale during one season (1908) by a committee acting under the authorization of the New Haven Bird Club. This committee consisted of Dr. Louis B. Bishop and Mr. Clifford H. Pangburn of New Haven, with the writer as chairman. Owing to the fact that comparatively little actual field work could be expected from local members, it was decided to broaden the scope of the banding work, making it, if possible, of a national character. With this in mind, it was brought before the ornithologists at Cambridge, as stated. The proposition appeared to incite interest and to meet with considerable favor from those present at the meetings, and a sufficient number agreed to help in the work to make it appear advisable to proceed on the plans outlined. The present report is a brief summary of what has so far been accomplished.

First, however, it may be well to make some mention of similar work in this and other countries. Mention was made last year of Audubon's experiment of placing silver wire on the legs of a brood of young Phœbes, two of which were found nesting in the same locality the following season; also of Taverner's work, which was very similar in its plan to that proposed, and which resulted in the taking in Louisiana of a Flicker banded the previous summer in Iowa. The capture of two ducks wearing bands of unknown source was also mentioned. The writer was unaware at that time, however, of the interesting investigations in this line made by Dr. Paul Bartsch in the heron rookeries near Washington, D. C., as well as of the excellent progress that has been made in two or three countries in Europe. Dr. Bartsch's results will be discussed later in connection with those of this season on the banding of Night Herons. The European experiments deserve mention at this time, the following account of them being taken largely from a letter from Herr Jakob Schenk, adjunct of the Royal Hungarian Central Bureau for Ornithology, and dated at Budapest, April 20, 1909.

In 1899 Mr. Christian Mortensen of Viborg, began marking birds with aluminum rings, first Starlings, then later, Storks, Ducks and the larger Birds of Prey. His results were published in 'Dansk. Ornithologisk Vereeniging Tidskift,' Vol. I.

In 1903, the bird observatory at Rossitten, Germany, started marking, chiefly *Corvus cornix*, but later large numbers of Storks

and Gulls (*Larus ridibundus*). The results were published in the 'Journal für Ornithologie' for the corresponding year. This work is being directed by Dr. Thienemann.

In Hungary marking was started in 1908. A number of papers have been published giving the results,[1] which are most gratifying but which we cannot review at this time, further than to say that some of the most notable results have been obtained with Storks. A number of these birds tagged in central Europe have been reported from Africa, and one from away down in Natal, South Africa. One example which is of considerable interest is reported in 'The Pictorial,'[2] an illustrated magazine published at Durban, South Africa, as follows: "Last year a stork marked near Königsberg in 1906 was reported to the observatory [at Rossitten]. It was snared in the autumn by natives on the north back of the Fittri Lagoon, and the ring and foot came into the possession of a French officer. On his return to France in 1908, he found out the meaning of the legend on the ring, 'Vogelwarte, Rossitten, Germania,' and forwarded the interesting relic to its destination."

According to Herr Schenk, Mr. W. C. Tait, Oporto, was this season going to attempt banding birds in Portugal, and he adds that the work will probably be taken up in France as well, while in England a similar movement has been begun by Mr. H. F. Witherby, the editor of 'British Birds.'[3] It is stated[4] that "already [July, 1909] some 1500 rings have been sent out" for use.

Preparation for the Season of 1909.

The bands used in 1908 were largely of the "closed" type, that is they were complete rings of aluminum, which consequently could be used only on very young birds whose feet had not yet

[1] Schenk, Jakob. Bericht über die Vogelmarkierungen im Jahre 1908. Aquila, Vol. XV, 1908, 8 pp.

Schenk, Jakob. Der Frühjahrszug des weissen Storches in Ungarn. Journal für Ornithologie, Jan., 1909. pp. 39–98. pl. v.

[2] Far-travelled Storks. The Pictorial, Vol. IV, No. 31, May 6, 1909, p. 975. I am indebted to Mr. J. H. Fleming of Toronto for the copy of the magazine containing this note.

[3] The scheme was propounded in British Birds, Vol. III, No. 1, June, 1909. See Auk, Vol. XXVI, July, 1909, pp. 332, 333.

[4] Bird Marking and Migration. Knowledge and Illustrated Scientific News, N. S., Vol. VI, No. 7, July, 1909, p. 274.

reached full size or in which the bones were still so soft that the band could be forced gently over. These bands have some advantages, but also a number of serious objections. The first of these is that anyone proposing to do banding must have on hand a variety of bands of several different sizes; and unless one knows before hand just what species of birds are going to be banded, it is apt to be just the size of band needed that one will be out of. This is obviated by the use of the "open" bands, two sizes of which have been found practicable to use on birds ranging in size from warblers to ducks and the larger owls. The second objection to the closed band is that of expense. In the first place they are cut from aluminum tubing, which is more expensive that sheet aluminum; but what is of far greater importance, the open bands can be stamped with the address and serial number while they are flat, before being rolled, while the marking of the 'closed' bands is a difficult and tedious (and hence expensive) process.

The styles of bands finally decided upon were made from sheet aluminum of the required thickness and cut to the desired size. The smaller band (designated No. 2) was from sheet aluminum 0.5 mm. thick, and are approximately 4 mm. wide and 26 mm. in length. The larger bands (No. 4) are 6 mm. wide, 44 mm. long, and 0.7 mm. in thickness. The "return address" is impressed on the flat band with a steel stamp, made in one piece, so that the whole address is put on with a single impression. Through the kindness of the editors of 'The Auk' we have been allowed to use the name of this journal for the "return address," the inscription reading

NOTIFY
THE AUK
NEW YORK

as here shown. Although arranged, as indicated in three lines, the letters are less than 1 mm. ($\frac{1}{32}$ inch) in height, so that the whole goes easily on the width of even the small band, and uses up only 7 mm. of its length. The number is now added beside this inscription, the whole occupying about 15 or 16 mm. of the length of the band. If the blank end of one of the No. 2 bands be cut off close to the number, the portion bearing the inscription and number may now be rolled into a small circular ring with an internal

diameter of approximately 4 mm. when the ends of the metal meet evenly. This is about the size that would ordinarily be used for sparrows and the like. For larger birds the band is merely cut a little longer, while on the other hand, the ring may be made smaller by allowing the ends to overlap, the extra weight being insignificant. In practice, as a matter of fact, it is found more convenient to allow the ends to overlap a bit in all cases.

The record blanks which are sent out with the bands, and are to be filled in when the bands are used, are essentially the same as those described last year. A somewhat different method is employed, however, of keeping these records when they are turned in. Instead of being copied on larger cards, they are gone over carefully to see that they have all the requisite data, and are then filed serially in the order of their numbers, since they bear, of course, the number of the band used. When a "return" record now comes in, that is, when a banded bird is found and reported, the data of this are filled in on a red slip of the same size as the banding record, which is on white paper. The return records can then be filed in their appropriate positions with the banding records, where on account of their conspicuous color, they may easily be found when desired.

Having made these arrangements for the season's work, all that remained was to distribute the bands and banding record blanks among persons who were willing to assist in the undertaking. A number of well known ornithologists, and some others connected with educational institutions, were asked to assist by acting as local agents for distribution of bands to field workers in their vicinity. A considerable number complied with this request, and to these we are deeply grateful for their disinterested assistance. In addition to this quite a few persons made application for bands directly, as a result of the publication in 'The Auk' last April of the paper setting forth the plans of the work. In all something over 5,000 bands have been distributed this year, and we consider it extremely satisfactory for the first season's work that approximately one-fifth of these were used and are now being worn by a very considerable number of species of wild birds. This leads us to a brief consideration of the

Results of the Season's Work.

The actual number of records that have been returned to date[1] is 911. It is safe to say, however, that if all the records of birds that have been banded were in, the number would easily reach the 1000 mark, since several who did banding have not as yet, for one reason or another, been able to send in all their blanks. The number of returns from banded birds that have been received is also encouraging, but it is more difficult to say just how many of these there are, since a "return" may be for a bird which is perhaps found dead in the same locality soon after banding (there are several such cases due to one cause or another), or for one not taken for a long time, and then at an entirely different place. Record is made of all such cases which come to notice, and there are now in the file 31 of the red slips, which shows that slightly over 3 per cent. of the birds banded have been heard from since. This should not be taken as indicating actually the degree of efficiency of the system, since it must be remembered that there is a chance of hearing from the other 97 per cent. for a number of years yet — for as long, in fact, as the span of life of the birds.

As to the kinds of birds banded, these were of great variety, especially as banding was done in all sections of the northern United States. As would be expected, however, perhaps the species most often banded, with the exception of those which live in colonies, was the Robin, and the first good return record was from a bird of this species. I wish it were possible to mention individually all those who have helped in the work, but the list would be too long. I cannot refrain, however, from naming a few of those who have rendered most signal service. Messrs. Leonard W. Pearson and Alfred C. Redfield of Wayne, Pa., members of the Delaware Valley Ornithological Club, sent in altogether 219 records, nearly 200 of which were for Black-crowned Night Herons banded at Barnstable, Mass. Prof. S. A. Courtis, of Detroit, banded 99 birds, mostly Common Terns, at the St. Clair Flats. Mr. Charles W. Miller, director of the Worthington Society for the Study of Bird Life, Shawnee-on-Delaware, Pa., caught many birds, especially Orioles

[1] December 1, 1910.

and Song Sparrows, in traps, banded them, and set them at liberty. Some of the birds he caught again six or eight times after they had been banded. Mr. Miller sent in 74 records. Dr. R. M. Strong, of the University of Chicago, took an active interest in the work, and as a result of his own efforts, and the bands he gave out, 72 birds were banded, 37 of them being by Mr. Ralph W. Chaney, also at the University of Chicago. Mr. William L. Finley of Milwaukee, Ore., sent in 41 records, and Mr. A. A. Saunders, with the U. S. Forestry Service in Montana, 32, both of them including a variety of species. Mr. Roy Thompson, of Cando, N. Dak., together with Mr. D. S. Englar, sent in 32 records, and so on. The writer, with the assistance of several friends, succeeded in banding 209 birds, most of which were young Common and Roseate Terns on the Wee Pecket Islands in Buzzards Bay.

Time will not permit of an enumeration or discussion of all the "returns" from the banding that have been received, so only some of the more interesting cases will be given. These will be enough, I think, to convince the most skeptical that the scheme is practicable and promises valuable results, even if we did not have also the notable results which have been gained abroad by this kind of work.[1]

The first return record obtained by us was for a Robin which was banded with one of the old-style closed bands in 1908. The data may be given briefly as follows:

No. N. H. 251. Robin, half fledged. Banded in an orchard at Kingston, R. I., August 4, 1908, by Leon J. Cole and Wm. F. Kirkpatrick. Shot at Kingston, R. I., by Mr. Kirkpatrick, on April 9, 1909. This bird was taken the following spring after being banded, and at the poultry plant only 200 yards or so from the orchard in which it was reared. We know nothing, of course, as to where it had been in the meantime, but at any rate we have incontrovertible evidence that it had returned to its place of nativity. It should be said in passing that this Robin was not shot for the purpose of obtaining the band, and that Mr. Kirkpatrick had no

[1] Since the above was written there have been several interesting "returns," including that of a Bluebird banded near Portland, Maine, and killed in Rutherford County, N. C., and of a Robin banded near Sandusky, Ohio, and taken near Nashville, Tenn.

thought of the possibility of its being banded until he picked it up. The bird was shot in connection with certain pathological investigations being made at the Rhode Island Agricultural Experiment Station. Sparrows and a few other birds were taken to determine in how far the so-called "blackhead" disease of turkeys might be prevalent among them, and what rôle they might perhaps play in its dissemination.

Of most interest are the returns from the Black-crowned Night Herons, tagged when nestlings, in a rookery at Barnstable, Mass., between June 21, and July 8, 1909. Of these seven have since been reported, as follows:

No. 4675. Banded June 23, by Leonard S. Pearson. Shot August 27, at Holliston, Mass., by Mr. Albert Bailey, who "took it for a hawk" after his chickens! Time, 65 days; distance, 70 miles.

No. 4686. Banded June 24, by Leonard S. Pearson. Caught in a steel trap August 29 at Berkley (near Taunton), Mass., by A. R. Graham and Son, who have a trout farm, and have to wage war against the herons because of their depredations on the young trout. Time, 66 days, distance, 45 miles.

No. 4696. Banded June 24, by Leonard S. Pearson. Taken at Minot (near Marshfield), Mass., August 18, by Dr. E. L. Parker, who writes that it "had evidently been shot as it had a broken wing." He killed the bird, and found the band. Time, 55 days; distance, 35 miles.

No. 4705. Banded July 8, by Alfred C. Redfield. Shot at Goat Island, Cape Porpoise, York Co., Maine, Sept. 11, by Clifford H. Poole. Time, 65 days; distance, 120 miles.

No. 4724. Banded June 24 (?) by Alfred C. Redfield. Shot at Wellfleet, Mass., about the middle of August, by Elmer Wiles. Time, about six weeks; distance, 20 miles.

No. 4770. Banded July 8, by Alfred C. Redfield. Shot by unknown gunner; found by Mr. Fred Seaver on Sept. 4, at East Orleans, Mass. Time, 58 days; distance. 15 miles.

No. 4792. Banded July 8, by Alfred C. Redfield. "Found on the marshes in a crippled condition" at Seabrook, N. H., Sept. 17, by Mr. Charles C. Buswell. Time, 71 days; distance, 90 miles.

These records bring out a number of interesting points. First,

it is interesting to note the vicissitudes of these young Herons; the mortality rate among them must be very high, that such a considerable number should fall into man's hands. It further illustrates that the average man with a gun is not at all particular as to what he shoots, since few birds are safe that fly within range, and the young and inexperienced Night Herons have to pay a heavy tribute. It may be by this sort of selective elimination, rather than by the actual learning on the part of individuals, that many birds have become so wary of man, and especially of man when he carries a gun. Another noticeable feature is the direction of dispersal of these birds after leaving the rookeries. As will be seen by a glance at the accompanying sketch-map (Fig. 1), the general trend of dispersal was northerly. I suspect, however, that instead of being interpreted as a definite northward migration of these birds, it should be looked upon rather as a scattering of the young in all directions in search of food, which must be relatively difficult to obtain near the rookeries where the parents have been foraging during the breeding season. The reason that this movement appears to be largely northerly in the present instance may be due to the fact that there is no land to the south, dispersal in that direction being therefore precluded. However, the data lead to the conclusion that merely because young birds appear in a certain locality in the autumn, it must not be inferred that they have necessarily come from the north. Mr. Brewster, in his 'Birds of the Cambridge Region,' speaks of the fact that young Night Herons often appeared there in the late summer, and casually suggests that they have come from further north. From what the present records teach us, it seems not at all unlikely that these birds which appeared near Cambridge in the fall may have been reared on Cape Cod.

In the present connection it will be of interest to compare with those given above the results obtained by Dr. Paul Bartsch with Black-crowned Night Herons which he banded at Washington, D. C.,[1] of which work, as has already been stated, the writer was unaware when he made his last report. Dr. Bartsch used a method in all essentials like the one used by us. All his Herons were

[1] Bartsch, Paul. Notes on the Herons of the District of Columbia. Smiths. Miscl. Coll., Vol. XLV., Pub. No. 1419, Quart. Issue, Vol. I, Pts. 1 and 2, pp. 104–111, pls. xxxii–xxxviii. Washington, 1904.

banded in the vicinity of Washington. The dates of banding are not given, but were during the breeding season. In 1902 one "return" resulted, the specimen being shot September 24, 1902, at Abingdon, Md., about fifty-five miles northeast of Washington.

Fig. 1. Dispersal of young Black-crowned Night Herons from colony at Barnstable, Mass

In 1903 seventy-eight young were banded. There were five returns from these: one was captured July 19, in a street in Leesburg, Va.; the second was caught July 20 in a fish trap on the Potomac

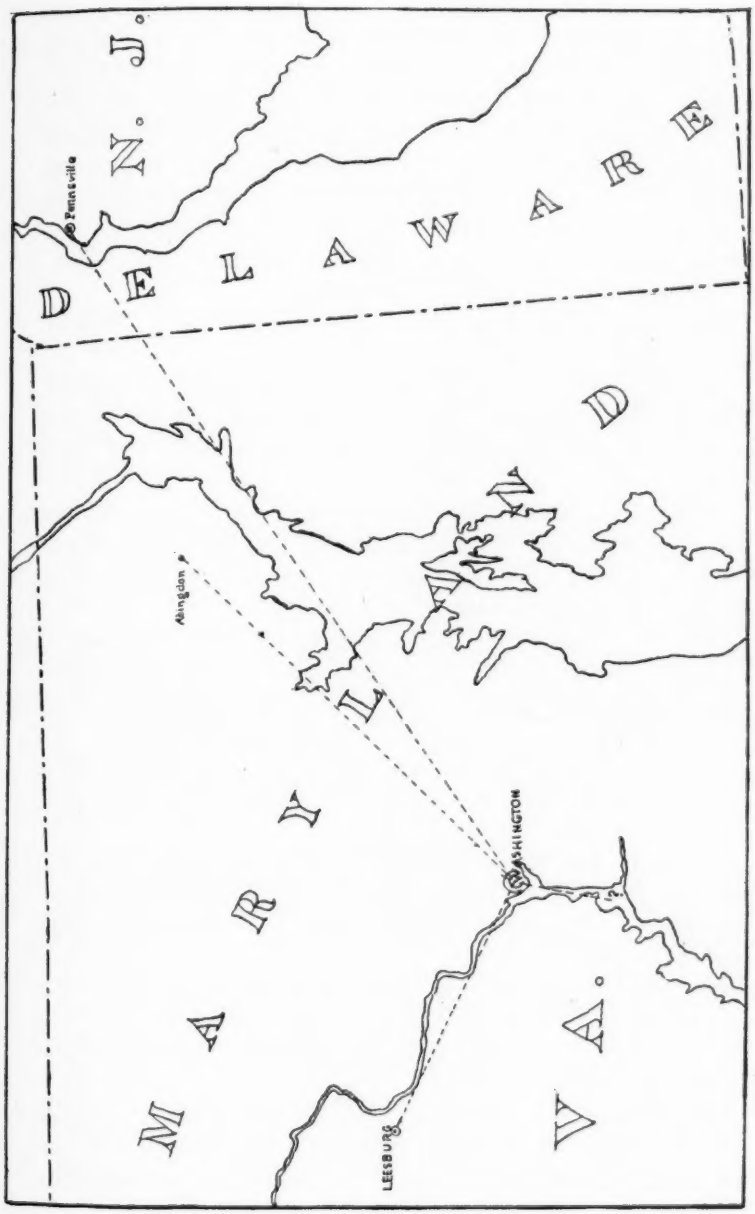


Fig. 2. Dispersal of young Black-crowned Night Herons from colony near Washington, D. C. (From data given by Bartsch.)

below Washington; the third was shot at Pennsville, N. J., July 18; while the fourth and fifth were found dead under the tree in which they had been marked. The second chart (Fig. 2), constructed from Dr. Bartsch's data, together with a consideration of the dates in the two cases, shows the striking similarity between his results and those obtained by us in New England. Here, again, although the number of records is small, we get a suggestion of the general dispersal of the young as soon as they are able to get away from the parent colony. Furthermore, there is an indication that this dispersal preponderates in northerly directions.

One or two others of the more interesting "returns" will be all that our time will allow:

No. 577. Flicker, fledgling, tagged at Kingston, R. I., June 30, 1909, by John R. Eldred. Shot by a student in a different building at the same place, September 22, 1909. Reported by Prof. John Barlow.

No. 832. Sora Rail, adult, was caught May 5, 1909, on Wooded Island, Jackson Park, Chicago, and banded by Archibald Church. On May 8, three days later this same bird was captured alive on the same island by Paul Pause, Jr.

No. 988. Robin, 6 days old, banded at Berwyn, Pa., by Leonard S. Pearson, June 6, 1909. Found dead at Devon, Pa., one and one-half mile from where banded, on July 4, 1909, by George A. McCook. In commenting on this record Mr. Pearson says it shows that the parent birds must feed and care for the young when they leave the nest prematurely, since these birds were unable to fly when they started out into the world.

No. 1930. Red-breasted Merganser, fledgling, banded August 7, 1909, at Plum Lake, Vilas Co., Wis., by Ely Whitehead. Shot on Big Lake St. Germain in the same county by F. Wagner, on September 28, 1909.

No. 4169. Common Tern, about two weeks old, tagged at the St. Clair Flats, Lake St. Clair, July 5, 1909. Shot at the Flats, not far from place of banding, on August 23, 1909. Reported by Lou J. Eppinger of Detroit.

Other records might be enumerated, but those already given are sufficient to indicate the sort of results that may be expected from this work, and that are, in fact, being obtained. Since the birds

have gone South there has been a lull in the "returns," but it is to be hoped, if any of them are so unfortunate as not to survive to visit us next spring, that they will at least arrange to fall into someone's hands, and that the records may finally come to us. It is an exciting moment when a "return" comes in, and while the banding record for the number is being looked up, and some light is thrown on that particular bird's past history and travels, a story that in most cases has ended as a tragedy.

And now a few questions of general import should be considered. Many have asked: "But what is going to be the effect of this banding work upon the birds? Is it likely that they will be shot in the hope of securing the bands? Will not the bands injure their legs, or catch in the nest materials, or on twigs? Will not the handling of the young disturb the nests so that the parents will desert and abandon their young? These and other objections have been raised, and we must face the questions frankly. As to the first question, that I believe may be answered unreservedly in the negative. So far as the results of this season go, they show that in no case was a bird killed for the purpose of securing the band; in fact, there was no knowledge of the existence of the band until the bird was picked up. In the one case where there might have been such an expectation, we are assured by Mr. Kirkpatrick that he had no thought of the possibility of taking a banded bird until he had the Robin in his hand and noticed the band on its leg. By no one would the indiscriminate shooting of birds in the hope of recovering bands be more discountenanced than by those who are interested in this method of investigating bird migration.

Considering the second question, there appears to be little or no danger of injury to the leg by the bands. In the case of nearly all the "returns" the question has been asked of the finder whether the birds showed any signs of having been incapacitated or inconvenienced by the bands, or whether the legs showed any abrasion or other injury as their result. All the replies received have been in the negative. On the other hand, Mr. Benjamin T. Gault, who banded some Purple Martins and other birds in Du Page Co., Ill., reported one case in which a young bird of the former species lost its life as a result of the nesting material becoming entangled in the band, while in several cases it was reported that birds which were at the

time nearly ready to fly anyway could not be induced to remain in the nest after they had been removed in the process of banding. In several instances banded young were later found dead near the nest, but it was not definitely ascertained whether this was in any way due to the banding. It is not an uncommon thing to find the young out of a nest even when they have not been banded. This is probably, however, the greatest danger to the birds from our work, and it is one that we must learn to avoid. To this end we have been collecting testimony of the experience of as many of our field workers as we could, and should welcome more. If there are certain species which are especially liable to be disturbed in this way, or if the young are more likely to desert the nest prematurely at any particular age, then we want to find out, and govern our operations accordingly. There is probably little or no danger of desertion of the young by the parents on account of their being disturbed; every one who has made many observations afield, knows that birds who will desert their eggs at the slightest provocation, will stay by their young with the greatest fidelity.

These are, as I have said, some of the points upon which we need more data, and there are also a number of others. For one thing the bands we are at present using, though answering very well, are not in every respect satisfactory. The aluminum is rather stiff and lacks sufficient pliability, so that several have complained of having bands break when they were attempting to use them. Others have objected that it was very difficult to shape the bands to the legs of small birds and to bend them on; but we have found by personal experience that this could be done very readily with the aid of a small pair of round-nosed pliers, while in addition a pair of strong scissors was needed for snipping off the ends of the bands. We hope to be able to find a kind of aluminum that is more pliable, and will overcome some of the objections, but any one who can invent an improved band will be doing the cause a great service. It is a question, also, as to what extent these bands are practicable for use on sea birds and others that go into salt water, which may so corrode the aluminum as to render the inscription and number illegible.

ADDENDUM.

At a meeting of persons especially interested in the proposition to study the movements of birds by the banding method, held in the Hotel Endicott, New York City, on the evening of December 8, it was decided to form a definite organization for carrying on the work. Accordingly a committee was appointed which drew up the following:

ARTICLES OF ASSOCIATION.

Article I. Name.

The name of this organization shall be the American Bird Banding Association.

Article II. Object.

The object shall be the banding of wild birds and the recording of accurate data on their movements.

Article III. Membership.

Any person interested in the objects of the Association may become a member upon payment of the annual dues.

Article IV. Dues.

The dues shall be one dollar annually, payable January first.

Article V. Officers.

An executive committee of five members, elected by the Association, shall transact all business of the Association and shall render an annual report. This committee shall have the power to fill all vacancies which may occur in its membership.

Article VI.

Upon the written petition of twenty (20) members, made to the Executive Committee, any question may be brought to a vote by the Association.

Article VII.

Any member more than two years in arrears for dues shall automatically cease to be a member of the Association.

The organization thus started with a membership of over thirty persons, being mostly members of the American Ornithologists' Union who were in attendance at the annual meetings of that

organization then being held in New York City. It is earnestly hoped that all other members of the Union who are interested in this proposition will aid in the work by becoming members of the Association. We look also for similar support from the members of other Ornithological Clubs, and in fact from any persons who may take an interest in the movement. Persons desiring to become members should send their names to the Secretary-Treasurer, Mr. C. J. Pennock, Kennett Square, Chester County, Pennsylvania.

It should be understood, however, that it is not necessary for one to become a member of the Association in order to assist in the actual work of tagging birds, though it is believed that such persons as are willing to assist in the field work will in most cases be sufficiently interested to lend also the small financial aid which will be conferred by actual membership. Members will receive without further expense all reports of the Association, and such other circulars or bulletins as may be published.

In addition to having merely the names of those who wish to enroll as members, the Executive Committee would be glad to communicate with all persons who will take a supply of the bands and assist in the actual banding of birds. The committee desires especially to get into communication with persons who have access to large colonies of birds suitable for banding, and with hunting clubs, organizations for game preservation, and the like, who could as a result of banding their birds, not only help in the general questions of migration, dispersal, etc., but could at the same time tell what is becoming of their own birds.

It is proposed to publish later a leaflet giving full directions for using the bands.

LEON J. COLE, *President and Chairman of the Executive Committee,* College of Agriculture, University of Wisconsin, Madison, Wis.

C. J. PENNOCK, *Secretary-Treasurer,* Kennett Square, Chester Co., Pa.

LOUIS B. BISHOP, 356 Orange St., New Haven, Conn.

GLOVER M. ALLEN, 16 Louisburg Square, Boston, Mass.

THOS. S. ROBERTS, 1603 Fourth Ave., S., Minneapolis, Minn.

A LIST OF BIRDS OBSERVED AT ASHLAND, VIRGINIA.

BY G. C. EMBODY,

Cornell University.

THE town of Ashland is situated near the center of Hanover County, about ninety-nine miles south of Washington and seventeen miles north of Richmond. The region occupies a position intermediate between the typical piedmont plateau and the coastal plain, the former occurring three miles to the west, the latter a somewhat greater distance to the east.

From Ashland to the southward the drainage is into the Chickahominy River; to the northward, into the South Anna and Pamunkey Rivers, the former river tributary to the latter. The range in altitude for the whole area is approximately from two hundred to two hundred and forty feet above sea-level. The region is poorly drained and in many places standing water occurs at varying depths from two to six feet below the surface. Much land is unfit for cultivation because of this excessive amount of water. In such fields tangles of weeds and briars prevail with scattered patches of sedge, berry bushes and sassafras, all of which furnish food or shelter for such winter residents as Song, Field, and Tree Sparrows, Juncos, Cardinals, and Carolina Wrens; and later, nesting sites for Cardinals, Indigo Buntings, Prairie Warblers, Chats, White-eyed Vireos, Catbirds, and Brown Thrashers.

The woods, which cover a rather large area, may be conveniently grouped under three types; the high, dry oak wood, the sandy, rather moist pine, and the low moist, sometimes swampy wood in which predominate the tulip-tree (*Liriodendron tulipifera*), sweet gum and elm (*Ulmus americana*). The pine type seems to occupy the greatest area and consists almost entirely of trees less than eight inches in diameter. The sweet gum-elm type ranks second in extent, while the dry oak woods occur in scattered places on the well drained hills. The sweet gum-elm woods seem to be the richest in bird life, during migrations as well as during the breeding season.

There are two bodies of water, Railroad Pond, two miles to the

north, and King's Pond, three miles or less to the west. These are not sufficiently large nor do they furnish the necessary conditions for attracting or supporting more than an occasional duck or shore-bird. This in a large measure accounts for the absence of such birds from the list. The single duck which came to my notice was in too great a hurry to be identified with certainty.

The climate is free from extremes of heat and cold. The range of temperature between normals for January and July averages 42° F. There are, however, conspicuous alternations of warm and cold spells in spring, which injure early blooming fruit trees, especially peaches, and which doubtless affect in no inconsiderable way the movements of migrating birds.

The region lies within the Carolinian Faunal Area but close to the isotherm marking the northern limit of the Austroriparian. This is indicated by the following comparison of the temperatures taken at Ashland in 1908, with those marking the northern limits of the Lower Austral and Carolinian respectively:—

Sum of mean daily temperature, above 43° F.

Ashland 1908	16212
Northern limit Austroriparian	18000[1]
Northern limit Carolinian	11500[1]

Mean temperature for the six hottest consecutive weeks.

Ashland 1908	77.1 F.
Northern limit Austroriparian	78.8[1]
Northern limit Carolinian	71.6[1]

From this condition of affairs a few lower austral forms might be expected to invade the region about Ashland, but aside from the Black Vulture and Mockingbird no typical ones were observed. One should be on the lookout for such forms as Chuck-will's-widow, Brown-headed Nuthatch, Southern Hairy Woodpecker, Red-cockaded Woodpecker, Blue Grosbeak, Swainson's Warbler and Prothonotary Warbler.

In the following list only those birds are mentioned which were observed by the writer within a radius of five miles of Ashland and during the period from September 10, 1907, until June 17, 1908.

[1] Merriam, Life Zones and Crop Zones of the United States, 1898, p. 55.

I am indebted to Mr. E. A. Evans, Director of the Richmond Experiment Station, for the climatological data here used. For more detailed information regarding the physiography, drainage, and soils the reader is referred to the 'Soil Survey of Hanover County, Virginia' by H. H. Bennett and W. E. McLendon, U. S. Department of Agriculture, 1906.

It is with the hope that someone may continue the work and furnish us with a reasonably complete catalogue of the birds of Hanover County, that this preliminary affair is put forth.

Annotated List.

1. **Podilymbus podiceps**. PIED-BILLED GREBE.— Occurs in open waters from about November 20 until April 9. Occasional pairs were seen on Railroad and King's Ponds.

2. **Botaurus lentiginosus**. BITTERN.— A rare winter visitant seen but once, November 2, 1907.

3. **Butorides virescens**. LITTLE GREEN HERON.— A summer resident, not common. One or more may usually be found at King's Pond or in the swamp two miles south of Ashland.

4. **Actitis macularia**. SPOTTED SANDPIPER.— Found in small numbers during April, May, June and September. It may breed but a nest has not yet been discovered.

5. **Oxyechus vociferus**. KILLDEER.— A few were seen during the latter part of March, during April and October. All were feeding in wet meadows or ploughed fields.

6. **Colinus virginianus**. BOB-WHITE.— A fairly abundant resident, more in evidence during the period of song, from the middle of April through the greater part of July.

7. **Meleagris gallopavo silvestris**. WILD TURKEY.— Turkeys still exist in some numbers in the more unsettled parts of Hanover County. One was brought in by a farmer who had killed several during the fall, five miles to the northwest of Ashland.

8. **Zenaidura macroura carolinensis**. MOURNING DOVE.— Rather common from March 15 until late in November. Occasionally seen in winter.

9. **Cathartes aura septentrionalis**. TURKEY VULTURE.— Common throughout the year. Breeds.

10. **Catharista urubu**. BLACK VULTURE.— The "Carrion Crow" seems to be nearly as abundant as the preceding species and may breed.

11. **Accipiter velox**. SHARP-SHINNED HAWK.— Recorded but twice during the period, October 20 and November 5, 1907.

12. **Accipiter cooperi**. COOPER'S HAWK.— One only was identified with certainty, January 16, 1908.

13. **Buteo lineatus**. RED-SHOULDERED HAWK.— Not uncommon as a summer resident. A nest with half-grown young found May 11, 1908. Occasionally seen in winter.

14. **Buteo platypterus**. BROAD-WINGED HAWK.— Apparently rare; one record only, March 15, 1908.

15. **Falco sparverius**. SPARROW HAWK.— Not uncommon during the fall migrations. Occasionally seen in winter, and in spring as late as April 28.

16. **Strix varia**. BARRED OWL.— Several observed at different times in a swamp about two miles south of Ashland. A young female just out of the nest was captured May 14, 1908. An adult male captured May 11, 1908, was smaller and considerably darker underneath than specimens from New York.

17. **Otus asio**. SCREECH OWL.— An uncommon resident. Breeds.

18. **Coccyzus americanus**. YELLOW-BILLED CUCKOO.— A tolerably common summer resident and breeder, arriving from the south about May first.

19. **Ceryle alcyon**. BELTED KINGFISHER.— A summer resident occurring in small numbers and restricted to the ponds and larger streams.

20. **Dryobates villosus**. HAIRY WOODPECKER.— A resident, apparently not common. A nest with young ready to leave was located in a dead burned pine, May 4, 1908.

21. **Dryobates pubescens medianus**. DOWNY WOODPECKER.— Rather common throughout the year. Breeds.

22. **Melanerpes erythrocephalus**. RED-HEADED WOODPECKER.— A few were seen in September and October, 1907. I cannot account for its absence or rareness in the late spring of 1908.

23. **Centurus carolinus**. RED-BELLIED WOODPECKER.— Very uncommon in spring, becoming common in late summer and fall.

24. **Colaptes auratus luteus**. FLICKER.— Common from May 15 until the middle of November. Rare in winter.

25. **Antrostomus vociferus**. WHIP-POOR-WILL.— A very common summer resident and breeder, arriving about the middle of April.

26. **Chordeiles virginianus**. NIGHTHAWK.— A rather common summer resident, becoming abundant during the September migrations.

27. **Chætura pelagica**. CHIMNEY SWIFT.— Arrives about April 21, from which time it is abundant until October 1.

28. **Archilochus colubris**. RUBY-THROATED HUMMINGBIRD.— A common summer resident, arriving about May 4.

29. **Tyrannus tyrannus**. KINGBIRD.— Common from about April 28 until the latter part of September.

30. **Myiarchus crinitus**. CRESTED FLYCATCHER.— Arrives the latter part of April, from which time it is common in every wood of the sweet gum-elm type until the middle of September.

31. **Sayornis phœbe**. PHŒBE.— Not uncommon as a breeder. The earliest record for 1908 was March 2.

32. **Myiochanes virens.** WOOD PEWEE.— A very common summer resident and breeder, appearing about May 1 and departing the middle of September.

33. **Empidonax virescens.** ACADIAN FLYCATCHER.— Breeds rather commonly in the swamp south of Ashland. It arrives from the south the fore part of May.

34. **Empidonax minimus.** LEAST FLYCATCHER.— An apparently rare transient. Its characteristic call was heard but once, May 10, 1908.

35. **Cyanocitta cristata.** BLUE JAY.— Uncommon in summer. A few were seen during the winter of 1907–08.

36. **Corvus brachyrhynchos.** CROW.— Abundant at all times.

37. **Corvus ossifragus.** FISH CROW.— A fairly common resident.

38. **Molothrus ater.** COWBIRD.— Fairly common in spring but rather rare during the breeding season. The eggs were not observed.

39. **Agelaius phœniceus.** RED-WINGED BLACKBIRD.— Arrives early in March, and is uncommon as a breeder. The absence of cat-tail marshes makes necessary the use of low bushes along streams for nesting places.

40. **Sturnella magna.** MEADOWLARK.— A resident, abundant from the middle of March until about November 20; fairly common during winter.

41. **Icterus spurius.** ORCHARD ORIOLE.— A rather common summer resident, arriving about May 5. Breeds.

42. **Icterus galbula.** BALTIMORE ORIOLE.— A transient, apparently uncommon. A few were seen on two occasions only, May 1 and 4, 1908.

43. **Euphagus carolinus.** RUSTY BLACKBIRD.— They appeared in large numbers March 15, 1908, but none were seen after March 18. This probably does not represent their true status.

44. **Quiscalus quiscula.** PURPLE GRACKLE.— An uncommon summer resident, arriving early in March.

45. **Passer domesticus.** ENGLISH SPARROW.— Abundant at all seasons.

46. **Carpodacus purpureus.** PURPLE FINCH.— Occurs in small flocks throughout the winter. Very common during April and the fore part of May; last seen May 11, 1908.

47. **Astragalinus tristis.** GOLDFINCH.— Common in flocks during the winter months. Abundant during April and May. Breeds.

48. **Spinus pinus.** PINE SISKIN.— Seven were seen with a flock of Goldfinches, January 16, 1908, two of which were collected.

49. **Pœcetes gramineus.** VESPER SPARROW.— An uncommon migrant which remains for a few days only. Observed March 22 and 24, 1908.

50. **Passerculus sandwichensis savanna.** SAVANNAH SPARROW.— Only one individual observed, March 24, 1908.

51. **Ammodramus savannarum australis.** GRASSHOPPER SPARROW.— A common summer resident. Arrives early in April. Breeds.

52. **Passerherbulus henslowi.** HENSLOW'S SPARROW.— I saw but one specimen which was collected May 11, 1908.

53. **Zonotrichia leucophrys**. WHITE-CROWNED SPARROW.— An uncommon transient and rare winter visitant. May usually be found about March 15.

54. **Zonotrichia albicollis**. WHITE-THROATED SPARROW.— A common winter visitant, occurring as late as May 11, 1908. Abundant during April and November.

55. **Spizella monticola**. TREE SPARROW.— Occurs during the winter months but is not common.

56. **Spizella passerina**. CHIPPING SPARROW.— An abundant summer resident, arriving about March 15.

57. **Spizella pusilla**. FIELD SPARROW.— Occurs abundantly at all seasons of the year.

58. **Junco hyemalis**. SLATE-COLORED JUNCO.— A winter visitant, occurring in large numbers until about April 6.

59. **Melospiza melodia**. SONG SPARROW.— A very common winter visitant. None were seen later than April 6; however at Fredericksburg, fifty miles to the northward, I heard them singing as late as June 10.

60. **Melospiza georgiana**. SWAMP SPARROW.— Apparently very uncommon. Two were seen March 15, 1908.

61. **Passerella iliaca**. FOX SPARROW.— Common for a few days beginning about March 15. A few observed October 20, 1907.

62. **Pipilo erythrophthalmus**. TOWHEE.— A common summer resident of general distribution. Arrives early in March. A few remain during winter.

63. **Cardinalis cardinalis**. CARDINAL.— A common resident, more abundant in spring and summer.

64. **Zamelodia ludoviciana**. ROSE-BREASTED GROSBEAK.— A very uncommon transient. One seen on each of the following dates:— May 5, 10 and 11, 1908.

65. **Passerina cyanea**. INDIGO BUNTING.— An abundant summer resident, arriving about May 1.

66. **Piranga erythromelas**. SCARLET TANAGER.— An uncommon transient. It arrives about April 29.

67. **Piranga rubra**. SUMMER TANAGER.— A very common summer resident, arriving about April 28.

68. **Progne subis**. PURPLE MARTIN.— A fairly common resident, occurring from about April 16 until the fore part of September.

69. **Petrochelidon lunifrons**. CLIFF SWALLOW.— A number were seen in September, 1907. This species must be further investigated before any general statements can be given relative to its abundance and breeding.

70. **Hirundo erythrogaster**. BARN SWALLOW.— A common summer resident, appearing about April 28.

71. **Iridoprocne bicolor**. TREE SWALLOW.— A rather common transient; the first swallow to appear in spring, arriving about April 6 (1908), or perhaps a week earlier, depending upon the weather.

72. **Riparia riparia**. BANK SWALLOW.— Large numbers were seen throughout the month of September, 1907, but none came to my notice the following spring.

73. **Stelgidopteryx serripennis**. ROUGH-WINGED SWALLOW.— A fairly common summer resident, arriving about May 4.

74. **Bombycilla cedrorum**. CEDAR WAXWING.— Occurs irregularly throughout the year; not known to breed.

75. **Lanius ludovicianus migrans**. NORTHERN LOGGERHEAD SHRIKE.— An uncommon winter visitant, occurring from the middle of October until the first of April; not known to breed. Ashland specimens are darker than typical *migrans*.

76. **Vireosylva olivacea**. RED-EYED VIREO.— A very common summer resident and breeder, arriving about April 28.

77. **Lanivireo flavifrons**. YELLOW-THROATED VIREO.— Rather common during migrations, arriving the latter part of April. A few undoubtedly breed.

78. **Vireo griseus**. WHITE-EYED VIREO.— A fairly common summer resident and breeder, arriving about April 27.

79. **Mniotilta varia**. BLACK AND WHITE WARBLER.— Very common during migrations, arriving about April 6. A few remain to breed.

80. **Compsothlypis americana usneæ**. NORTHERN PARULA WARBLER. Common during migrations, arriving about April 25. Those specimens which came to hand were migrating birds and the northern form. A female was observed May 4, 1908, building a nest thirty feet up in a pine tree. This nest was abandoned a week later and before the female could be determined as to its subspecies.

81. **Dendroica æstiva**. YELLOW WARBLER.— A fairly common summer resident and breeder. It arrives from the south about April 15.

82. **Dendroica cærulescens**. BLACK-THROATED BLUE WARBLER.— A tolerably common transient, appearing late in April.

83. **Dendroica coronata**. MYRTLE WARBLER.— An uncommon transient, arriving the fore part of March. A few may winter.

84. **Dendroica pensylvanica**. CHESTNUT-SIDED WARBLER.— A tolerably common transient. It appears late in April and remains about two weeks.

85. **Dendroica striata**. BLACK-POLL WARBLER.— A fairly common transient from about May 2 until 17.

86. **Dendroica virens**. BLACK-THROATED GREEN WARBLER.— Occurs as a transient, apparently uncommon. A few were seen in late September, 1907, and one only was noted the following spring, May 11, 1908.

87. **Dendroica vigorsi**. PINE WARBLER.— Very common during migrations and tolerably common in summer. They arrive as early as March 2. A female was observed feeding its young, May 11, 1908.

88. **Dendroica discolor**. PRAIRIE WARBLER.— A common summer resident and breeder; arrives late in April.

89. **Seiurus aurocapillus**. OVENBIRD.— Very common from about May 1 to September 20. Breeds.

90. **Seiurus motacilla**. LOUISIANA WATER-THRUSH.— A very common summer resident, occurring in every wet wood and along the larger streams. It arrives about March 26.

91. **Oporornis formosa**. KENTUCKY WARBLER.— Common as a summer resident but restricted to the larger wet woods. It arrives early in May.

92. **Geothlypis trichas**. MARYLAND YELLOW-THROAT.— Very common from April 27 until the latter part of September.

93. **Icteria virens**. YELLOW-BREASTED CHAT.— An abundant breeder. Arrives about April 28.

94. **Wilsonia citrina**. HOODED WARBLER.— A summer resident, common in all moist woods; first appears about April 28.

95. **Setophaga ruticilla**. REDSTART.— Arriving about April 24, it is abundant throughout the summer. Nest building was observed as early as April 28.

96. **Mimus polyglottos**. MOCKINGBIRD.— A resident, more common during spring and summer than in winter.

97. **Dumetella carolinensis**. CATBIRD.— An abundant breeder, arriving the third week in April.

98. **Toxostoma rufum**. BROWN THRASHER.— A summer resident and very common; arrives the last week in March.

99. **Thryothorus ludovicianus**. CAROLINA WREN.— A common resident, found in all sorts of habitats furnishing sufficient shelter.

100. **Troglodytes aëdon**. HOUSE WREN.— A very common breeder, arriving about April 11.

101. **Nannus hiemalis**. WINTER WREN.— Fairly common throughout the winter, leaving for the north during the first week in April.

102. **Certhia familiaris americana**. BROWN CREEPER.— Very common throughout the winter. It leaves for the north about March 26.

103. **Sitta carolinensis**. WHITE-BREASTED NUTHATCH.— A resident, at no time very common. Breeds.

104. **Bæolophus bicolor**. TUFTED TITMOUSE.— A resident, fairly common in winter and abundant at other times.

105. **Penthestes carolinensis**. CAROLINA CHICKADEE.— A common and generally distributed resident.

106. **Regulus satrapa**. GOLDEN-CROWNED KINGLET.— A very common winter visitant, remaining until about April 6.

107. **Regulus calendula**. RUBY-CROWNED KINGLET.— Fairly common during the month of March; not observed during the winter of 1907–08.

108. **Polioptila cærulea**. BLUE-GRAY GNATCATCHER.— Arrives about April 10 and breeds commonly in woods of the dry oak type.

109. **Hylocichla mustelina**. WOOD THRUSH.— An abundant breeder, arriving about April 28.

110. **Hylocichla fuscescens**. VEERY; WILSON'S THRUSH.— A transient of which but three individuals were seen, April 11.

111. **Hylocichla ustulata swainsoni** OLIVE-BACKED THRUSH.— A transient, apparently uncommon; observed May 11 and 17, 1908.

112. **Hylocichla guttata pallasi**. HERMIT THRUSH.— An uncommon transient, arriving as early as March 2. A few may winter.

113. **Planesticus migratorius**. ROBIN.— A common summer resident occasionally wintering in some numbers. They appear in large flocks about the middle of February.

114. **Sialia sialis**. BLUEBIRD.— A common resident, more abundant in March than at other times.

THE COURTSHIPS OF GOLDEN-EYE AND EIDER DUCKS.[1]

BY CHARLES W. TOWNSEND, M. D.

THE intelligence shown by Golden-eyes or Whistlers (*Clangula clangula americana*) in frequenting bodies of water in or near the heart of cities where they are safe from persecution, renders easy a study of their habits, yet very little has been published on the somewhat remarkable courtship performances of this bird. I have watched these courtships at Ipswich and once at Barnstable, Massachusetts, but my most intimate studies have been made in the Back-bay Basin of the Charles River between Boston and Cambridge.

The spring is of course the time when courtship actions are most indulged in, and they begin on mild days in February and continue until the departure of the birds for the North in April. In the autumn months, however, it is not uncommon to see the same performance given by both the adult and young males, although but incompletely carried out in the latter case.

The courtship action varies considerably, but a typical and complete one may be described as follows: One or more males swim restlessly back and forth and around a female. The feathers of the cheeks and crest of the male are so erected that the head looks large and round, the neck correspondingly small. As he swims along the head is thrust out in front close to the water,

[1] Read at a Meeting of the Nuttall Ornithological Club, Cambridge, Mass., March 7, 1910.

occasionally dabbing at it. Suddenly he springs forward, elevating his breast, and at the same time he enters on the most typical and essential part of the performance. The neck is stretched straight up, and the bill, pointing to the zenith, is opened to emit a harsh, rasping double-note, *zzee-at*, vibratory and searching in character. The head is then quickly snapped back until the occiput touches the rump, whence it is brought forward again with a jerk to the normal position. As the head is returned to its place the bird often springs forward kicking the water in a spurt out behind, and displaying like a flash of flame the orange-colored legs.

This appears to be the complete performance, and the female, although usually passive, sometimes responds by protruding her head close to the water in front, and then bringing it up so that it also points to the zenith. Further than this, I have not seen her go. It must be remembered that even as late as March there are many young males whose plumage resembles that of the female, and although the males are of larger size, it is often difficult to distinguish them from the females. That the female does take part to this limited extent in the nuptial performance, I have, however, convinced myself.

There are many variations of this curious action. It may be curtailed so that the thrusting of the head up into the air alone remains, or it may be limited to the upward thrust of the head and the jerk to and from the rump. When the birds are at such a distance that the note cannot be heard it is impossible to say whether it is always emitted when the bill is opened, but I have observed birds close at hand go through the performance silently. I have also seen them thrust out the head in front in such a way as apparently to scoop up the water, and then elevate the head, the bill pointing straight up, but closed as if they were drinking the water, although I doubt if this is the case. Sometimes the head is held on the rump for several seconds before it is snapped into place.

At Barnstable on March 28, 1909, I saw a male Whistler, after ardently performing the courtship action near a female, fly off to a distance of about a hundred yards. The female swam rapidly after him with head stretched close to the water but lifted up vertically from time to time in the courting manner and she soon joined her mate who copulated with her.

The display of the brilliant orange-red tarsi and feet by the males is particularly interesting. These members in the females are pale yellow in color, and it may be supposed that the males have attained the more attractive orange-red as a result of sexual selection. They certainly make good use of this brilliant color in the courtship display, for the flash of the orange feet contrasting with the snowy flanks of the bird and the dark water is extremely effective and noticeable even at a considerable distance. In this connection it is interesting to note that the legs and feet of both male and female Barrow's Golden-eye (*Clangula islandica*) are alike pale yellow. I am not familiar with the courtship of this bird, and as far as I know it has never been described but I think it is reasonable to infer that the display of the legs as in the American Golden-eye is *not* a part of the performance. As the Barrow's Golden-eye lacks the peculiar localized swelling of the lower windpipe found in the American species, one might suppose that the peculiar musical part of the performance was also lacking in this western species. A study of the courtship of this very similar yet very different bird is much to be desired.

There is no more unusual and bizarre sight in the bird world than a dozen or more beautiful Golden-eye drakes crowding restlessly around a few demure little females and displaying these antics of head, neck and foot, while ever and anon their curious love-song pierces the air.

In his Labrador Journal of July 11, 1775, Cartwright says: "The water too, instead of pans of ice, was mottled over with ducks and drakes, cooing amorously; which brought to my remembrance, the pleasing melody of the stockdove," and he adds in a foot-note: "Eider-ducks make a cooing at this time of the year, not unlike the first note of the stockdove." During a recent trip to Labrador with Mr. Bent in May and June,[1] 1909, the study of the courtship of the Eider (*Somateria dresseri*) was one of my greatest interests. Everywhere we went among the rocky islands that line the coast, pairs and little bands of Eiders abounded. We found twenty nests on an island of a few acres, and, on a walk around Esquimaux Island, we must have seen at least 500 of these

[1] Auk, Vol. XXVII, 1910, pp. 1–18.

beautiful birds. They were usually in pairs, and, when flying, the female preceded, closely followed by the male. This was certainly the rule when the birds were flying about unaware of the presence of man, but, when disturbed or frightened by his presence, the male often flew first in his eagerness to get away from danger. Sometimes several pairs, apparently mated, would swim about together or rest on the rocks close to the water, while at other times one or two females would be surrounded by six or eight males that were crowding about them to win their favors.

The actual courtship of the Eider may be recognized from afar by the love-note of the male which can be expressed by the syllables *aah-ou* or *ah-ee-ou*, frequently repeated, and, while low and pleasing in tone, its volume is so great that it can be heard at a considerable distance over the water. On a calm day, when there were many Eiders about, the sound was almost constant. While the syllables *aah-ou* express very well the usual notes, there is much variation in tone from a low and gentle pleading, to a loud and confident assertion. In fact the tones vary much as do those of the human voice, and there is a very human quality in them, so much so that when alone on some solitary isle, I was not infrequently startled with the idea that there were men near at hand.

But the showy drake Eider does not depend on his voice alone, he displays his charms of dress to best advantage, and indulges in well-worn antics. It always seemed to me a pity that the magnificent black belly should disappear when the drake is swimming on the water, and the bird evidently shares my sentiments, for, during courtship, he frequently displays this black shield by rising up in front, so that at times in his eagerness he almost stands upon his tail. To further relieve his feelings he throws back his head, and occasionally flaps his wings. The movements of the head and neck are an important part of the courtship, and although there is considerable variation in the order and extent of the performance, a complete antic is somewhat as follows: The head is drawn rigidly down, the bill resting against the breast; the head is then raised up until the bill points vertically upwards, and at this time the bill may or may not be opened to emit the love-notes. Directly after this the head is occasionally jerked backwards a short distance still rigidly, and then returned to its normal position. All this the drake

does swimming near the duck, often facing her in his eagerness, while she floats about indifferently, or at times shows her interest and appreciation by facing him and throwing up her head a little in a gentle imitation of his forcefulness.

The courtship of the Eider, although less striking and elaborate, bears a strong family resemblance to that of the Golden-eye.

NOTES ON THE FLORIDA GALLINULE (*GALLINULA GALEATA*) IN PHILADELPHIA COUNTY, PA.

BY RICHARD F. MILLER.

IT is a generally well known fact that our birds are slowly becoming fewer in the vicinity of our great cities, and on this account it is gratifying to record the discovery of a species inhabiting a restricted area near Philadelphia, which appeared here only recently, and is annually increasing in numbers. This is the Florida Gallinule, a large bird, whose existence as a summer resident in Southeastern Pennsylvania was unknown until 1904, when I found it breeding at Port Richmond, Philadelphia County, in a deep-water cattail marsh, and, as in all such discoveries, the detection of the birds was purely accidental.

Probably the reason it has escaped notice is on account of its secretive habits, and this alone has saved it from destruction by gunners. In my opinion, it has been overlooked chiefly because very few of our ornithologists are enthusiatic marsh nest hunters, and it seems to me that their ardor is deteriorating, as few of them are ambitious enough to don old clothes and wade through slimy mud and dirty water in quest of knowledge of marsh birds. This is probably the reason why there is so little known regarding the nidification and other habits of these birds.

A brief summary of our knowledge of the occurrence of the Florida Gallinule in this locality, prior to its discovery as a summer resident, will not be amiss. It appears not to have been very well known to the older ornithologists, who generally regarded it as a

rare transient. In Warren's 'Birds of Pennsylvania' (2d revised edition, page 73), we learn that it was a "regular, but rather rare spring and fall migrant," and that it "probably breeds." In Stone's 'Birds of Eastern Pennsylvania and New Jersey' it is listed (page 32) as a "rare or irregular transient about Philadelphia," and on page 68 as a "regular transient but not very common." There is apparently nothing further on record regarding the bird's status in the Delaware Valley. There are, however, some additional records of birds shot, but all of these were evidently migrants and in no sense modify the statement made above.

The marsh where the Florida Gallinule was first found nesting in the Delaware Valley, is located at Port Richmond, in Philadelphia County, in the northeastern part of the city, less than five miles from the city hall, and is the largest marsh in that part of the country. It comprised about twenty acres when I first visited it, but it has since been reduced to about one third of that size. It lies between two streets (which are dirt-covered sewers used only by pedestrians) and the bank of the Delaware River, and has been divided into three parts by the intersecting of two streets and a canal. The bank carries a railroad, which is used daily by a noisy shifting engine, and a large dump on the west is worked daily, and is the chief cause of the rapid decrease in the size of the marsh.

In the immediate vicinity of the marsh there are several large manufacturing plants. This marsh is now covered with a dense growth of cattails growing in water from one to four feet deep; formerly it contained large patches of calamus, but the struggle for existence of this reed ceased in 1906, when the water killed it. Some spatterdocks and *Peltondria* still grow along the edges and duckweeds cover the water. The marsh is about six feet below the surface of the streets, and is drained by several sluices, the water rising and falling with the tide in the Delaware River, and is thus always quite fresh.

My acquaintance with the Florida Gallinule began in this marsh on June 1, 1904, when, while hunting for Least Bittern's nests, I suddenly flushed a bird from a patch of reeds. My first nest was found on June 21, 1904, and the second (of the same pair) on July 1; both sets consisted of ten eggs. This was probably the only pair inhabiting the marsh in 1904, but as I did not thoroughly explore it, not then being inured to marsh exploration, it is impossible for me

to be positive. Subsequently, however, I have carefully explored the marsh every year, and the results of my investigations and observations I am now placing on record.

The Florida Gallinule is an early breeder in the Port Richmond marsh. It puts in an appearance in April, arriving generally after the middle of the month, and before the vegetation of the marsh has reached a height sufficient to afford them concealment. To avoid destruction at this season from gunners they skulk and hide in the rank, tangled mass of dead reeds. It commences nest building as soon as the reeds are high enough for them to build in, and the nest is seldom hidden, often being placed in thin reeds, and sometimes in a solitary clump.

The following records comprise my data upon its time of arrival and the date when the first nests were discovered.

Arrived	April 21, 1905;	had	12	highly	incubated	eggs	on	May 31.
"	April 27, 1906;	"	12	"	"	"	"	22.
"	April 28, 1907;	"	14	"	"	"	"	29.
"	April 25, 1908;	"	11	"	"	"	"	27.
"	April 16, 1909;	"	13	"	"	"	"	22.

Supposing the period of incubation for eggs of *Gallinula* to be 21 days, the same as that of the common hen, and giving 15 days incubation to all of these sets, we find that the first clutch was completed on May 16, the second on the 7th, the third on the 14th, the fourth on the 12th, and the fifth on the 6th. Reasoning that the eggs were laid in regular sequence, for the Gallinule lays daily, we can find the minimum time of the nest completion by subtracting the number of eggs in a set; *e. g.*, the first nest was completed on May 4, the second on April 25, the third on May 1, the fourth on May 1, and the fifth on April 24. These suppositions will serve to show that the Gallinule is an early nester, taking into consideration the time of its arrival, and that it loses no time in mating. It is a prolific layer too, for I robbed one pair three times in 1908, just to ascertain how often they would lay; on May 27, June 12, and July 10. I took from their nest nine, nine, and *eighteen* eggs, respectively, and have no doubt but that they had another set laid before August.

This pair occupied a small part of the marsh lying between one of the streets and an extension of the dump, so there can be no doubt

that the three sets were the product of the one pair, as no others were ever seen in it. The similarity of the eggs of the three sets in shape, size and coloration precluded any probability of their being the product of any other than the same female. The large set contained two eggs of abnormal size, and in incubation the clutch varied from fresh to pipped, the majority of them being over half incubated; two were rotten.

The following table will show how the Gallinule has held its own in such a frequented locality, despite gunners and nest robbers:—

1904, 1 or more pairs. (None were seen in the marsh in 1903.)

1905, 5 pairs, perhaps 6.

1906, 5 or 6 pairs. This year the marsh was not thoroughly explored.

1907, 9 pairs; one pair at Aramingo, a locality a mile north of this place.

1908, 9 or 10 pairs; one pair at Aramingo.

1909, 10 pairs; one pair at Frankford and another at Bridesburg. The former locality is a half mile above Aramingo, and these birds deserted it early in June, when boys despoiled their nest and the drought dried up the marsh, for the Aramingo marsh where they successfully raised a family. Bridesburg is two miles above Port Richmond on the Delaware River. The other two localities are upon the Frankford Creek, a tide-water tributary of the Delaware.

It will be seen that in four or five years the Florida Gallinule has more than doubled its numbers in this restricted area in spite of the decreasing size of the marsh, and it also is beginning to spread out in this vicinity. This is a good sign and insures the bird as a permanent summer resident when this marsh is filled in, as it will be in a few years, as the work of filling is steadily continued. I have never seen the Florida Gallinule in this vicinity at any other locality than those already cited, but Mr. Richard C. Harlow has observed it at Tinicum, Delaware County, Pa., in summer, and one was shot in October, 1907, in Camden, N. J. Both of these localities are along the Delaware River and contain good breeding grounds for the Gallinule, as I have ascertained in winter, and hope some day to confirm my suspicions by finding them there in summer.

The Florida Gallinule departs in October, and by November they are usually all gone; my latest record is November 16, 1909.

BIRDS OBSERVED IN SASKATCHEWAN DURING THE SUMMER OF 1909.

BY JOHN F. FERRY.

Plates X–XII.

THE following notes were made at two principal points in Saskatchewan, Prince Albert and Quill Lake, from May 20 to August 11, with an interruption from July 16 to 30.

The time spent at Prince Albert extended from May 26 to June 7; at Quill Lake, from June 9 to August 11, with the interruption from July 16 to 30 as above noted. Scattering observations were made at other localities as subsequently noted.

Prince Albert is slightly south of the center of the Province of Saskatchewan, while Quill Lake is 98 miles to the southeastward on the Canadian Northern Railroad.

Prince Albert, except near the Saskatchewan River, is situated in a slightly rolling semi-prairie country, containing many ponds and sloughs, and scattered thickets of poplar abound. It is a picturesque region and is thronged with breeding ducks. An interesting muskeg country lies to the south, but unfortunately we were not able to visit it. We located at a comfortable farm house about eight miles southeast of the town.

Quill Lake is surrounded by unbroken prairie. Poplar thickets or "bluffs" as they are locally termed, are a characteristic feature of the landscape. Toward the southern end of the lake they almost entirely disappear, while around the northern edge, they run together to such an extent that the term continuous woodland might be used to describe a large portion of the area they cover. Quill Lake actually consists of three portions, locally known as Big Quill, Middle Quill, and Little Quill. Big Quill is about eighteen miles long and five to thirteen miles wide; Middle Quill is four miles long by two wide; while Little Quill is fifteen miles long by seven wide. The northern and eastern sides of Big Quill are very shallow and the bottom is muddy. Boating is impossible in such places, and the investigator must rely on his waders. Big Quill is dotted

with many islands, mostly near shore, and this is true to a lesser extent of the other lakes. Most of the islands are low mud flats with scanty vegetation. Muddy bottoms usually surround them for a long distance. Much of the shore line, however, is gravelly and sandy, and occasional large boulders attest the glacial formation of the country. The waters of the lakes are strongly alkaline. Along the southeastern side of Big Quill, the country is broken by ravines leading to the lake. They usually drain adjacent ponds, which are favorite nesting grounds for ducks.

The Field Museum of Natural History of Chicago carried on field work in the above region during the time stated, but others joined the party from time to time. Chief of these was Mr. R. M. Barnes of Lacon, Ills., who came to make acquisitions to his fine collection of North American birds eggs. Besides being successful himself, he gave much assistance to his associates. Mr. F. F. Ferry joined the party on July 1, entering into the arduous routine of field-work enthusiastically, and in this manner spending his vacation. L. L. Pray of the Museum staff worked in the capacity of artist and taxidermist during the latter part of the field operations. John S. Charleson of Shoal Lake, Manitoba, an able taxidermist and collector, was employed for the work at Prince Albert. Recognition is also due Herbert C. Clark of Quill Lake, who acted as teamster, guide and general helper in a most efficient manner.

The following list is far from complete, as scientific investigation was not the main object of this work. Mr. Barnes took full notes and shot the parent bird for identification in most cases when he took a set of eggs. Excerpts from these notes are included herein and credited to Mr. Barnes.

List of Species.

1. **Æchmophorus occidentalis.** WESTERN GREBE.— This species was first seen in Little Quill on July 3. Several adults were met July 4 with their broods, usually three in number. The young were still in the down, and could not have been more than a few days old. They uttered a soft, whistling peep, when the parent bird left them to seek her own safety. On June 10 two nests of a large Grebe, each containing three eggs, were found. They probably belonged to the Western Grebe. These nests were destroyed later by a heavy gale on the lake.

2. **Colymbus auritus.** HORNED GREBE.— This species was abundant in the vicinity of Prince Albert. Its nests were frequently found. At Quill Lake it was much rarer, probably due to the fact that rushes and other high aquatic vegetation does not grow in any abundance about the Quill Lakes owing to the alkaline waters. A careful investigation of neighboring sloughs and ponds might show the bird much commoner than we found it. Dates of nests: May 30–31, fresh egg; June 1–5, fresh eggs; June 5–9, fresh eggs.

3. **Podilymbus podiceps.** PIED-BILLED GREBE.— Several seen at Prince Albert. One female was found dead on a nest containing two fresh eggs. Not positively identified at Quill Lake.

4. **Gavia immer.** LOON.— A fine pair of Loons was taken at Shoal Lake, Manitoba, on May 20. A single bird was seen on Big Quill on July 5.

5. **Larus delawarensis.** RING-BILLED GULL.— "This species we found abundant at Big Quill Lake, where two nests were found with fresh eggs, June 11, on an island well out in the lake. It nests in colonies on the small, flat, sandy, grass-covered islands lying near the lake shore. June 16, two such islands were visited, the first of which lay about three hundred yards off shore, about a mile from the creek connecting Big Quill with Middle Quill Lake. This island was somewhat crescent-shaped, nearly 100 yards long, and 20 yards wide at the widest part. It was a mere sand strip, and had grass grown over the middle of the widest part of the island. Here, usually in the grass, but some out on the open sand, were 157 nests of this species all containing eggs, mostly just on the point of hatching. One hundred and seventeen nests had three, twenty-two nests had two, eleven nests had one, six nests had four, and one nest had five eggs.

"A visit to this island a few days later found it literally overrun with young gulls. The nests in most cases were piles a few inches high of floating water-weed, found in the lake. Frequently they were quite well made, with a rude cup-shaped top, and sometimes were a depression tramped down in the grass, lined with a few of the same weeds, and sometimes only a slight depression scratched in the sand, around which a few of the weeds had been gathered.

"The old birds were very fearless in defense of their young and eggs, swooping and screaming around in close proximity to one's head, and, owing to the very large number of them, keeping up a deafening din.

"Within 500 feet of the above island, and slightly nearer shore, lay another triangular-shaped island, similar, but about 400 feet by 200 feet, slightly higher and having two separate grass plots, and a large patch of wild nettles upon it. Here we found a motley assembly of water birds breeding. The Ring-billed Gull predominated with 158 nests. They surrounded entirely a rookery of fifty-two nests of the Double-crested Cormorant, whose nests the gulls robbed daily to such an extent that but one cormorant egg was secured by us here. The nests and the ground adjacent were strewn with the shells of cormorant eggs. In another part of this island was a Common Tern colony occupying a narrow strip of grass-

covered sand apart from the main colony of gulls. We saw no signs of the gulls having molested the terns.

"The following duck's nests were found upon this island: Pintail, two nests; one each of Blue-winged Teal, Baldpate, Canvas-back, and two of the Lesser Scaup Duck. Five of these nests were destroyed by the gulls. There was also a Canada Goose nest at the edge of the gull colony. Two gulls had built their nests upon its very edge. The goose nest contained six eggs on the point of hatching.

"When I lay quietly for a few moments during a shower, the gulls would settle all around me on their eggs to protect them from the rain. Some sat within twenty feet of me, apparently unconcerned, eyeing me curiously Suddenly they all would spring into the air almost simultaneously and renew their screeching and swooping at me, and so far as I could see, without cause. I had not moved a muscle. I noticed these flights into the air usually occurred during a lull in the storm, when the rain was not falling so heavily. The young are pretty little creatures with thick, soft downy bodies, and legs far back. They run about as soon as dry from the egg shell, and hide in the grass or toddle over the beach in a ludicrous fashion. Their bills and feet are a beautiful delicate pink; eyes black, and their downy coat appears of two different shades, a grayish and a brownish color. Why this difference in color we could not determine, as young of both colors were found in the same nest. At other times all three young in a nest would be of the same color. The little fellows were fearless swimmers and would boldly strike out in the rough sea of the lake. They were more or less speckled with small, brownish black round spots." (Barnes.)

6. **Larus franklini.** FRANKLIN'S GULL.— This species was observed flying overhead at Prince Albert and was abundant during our stay at Quill Lake. They were often observed flying low over the prairies catching insects. An examination of three stomachs resulted as follows:

No. 1. Mass of digested matter among which was found remains of numerous midges (very little gravel).

No. 2. Mass of more or less well digested Acrididæ; also twelve Acrididæ but little digested, as were also one spider, one small mole cricket, one dragon-fly and immature Acrids and one nearly perfect water beetle.

No. 3. A moderate quantity of well-digested food which seemed made up of particles of Acrididæ, and of which eighteen are still recognizable.

No. 4. Very little well digested food; four large dragon-flies and six Acrididæ. (Above determinations by Walcott.)

Though the birds were so common, we could not locate their nesting site. However, Mr. Barnes's notes read as follows: "On the island containing the Ring-billed Gull colony visited June 16, I found a gull's nest among the Ring-billed Gulls' nests, but smaller. This nest contained three fresh eggs about two-thirds the size of the Ring-billed Gull's eggs. They are not like Ring-billed Gull eggs. Franklin's Gull was the only other gull about Quill Lake. I am convinced that these eggs belong to this species."

A great flock of Franklin's Gulls was observed on a strip of land between Middle and Little Quill Lakes on July 4.

7. **Sterna hirundo.** COMMON TERN.— These birds were abundant breeders about Quill Lake. Many nesting colonies were found on islands in the lake. "The nests were nearly all on the grass-covered parts of these islands, though some were located out in the sand or gravel. They were usually only a slight pile of grass-like weed found growing in the lake, sometimes but a mere depression made in the grass or sand. Once in a while there was quite a pretentious effort at nest-building out of this same weed, with a well-defined cup to hold the eggs. There were ninety-eight nests in a colony visited June 11. The eggs numbered two and three in a nest in about the proportion of two nests with two to three nests with three. One nest on this island contained four eggs. They all were about one-half incubated. One sky-blue egg was found.

"While visiting this colony at a later day, a heavy protracted rain occurred. Nearly all the terns returned to their eggs, though the writer lay on the ground within twenty-five feet of the nearest of them. It was a matter of interest to note their manner of alighting on the nest. They approached it with the usual airy tern-like flight, hovering some twenty feet above for a moment or two. With a sudden downward plunge, they stopped a foot or so above the eggs, fluttering for an instant. Finally they settled gracefully upon the nest, each bird facing the storm." (Barnes.)

On June 14, another colony on an island was visited. There were 147 nests, about four-fifths of which contained three eggs each. One June 16 another colony containing thirty-eight nests was found, and subsequently four other colonies were discovered. Nests containing highly incubated eggs were found on July 4, and many young had been killed by heavy rains. Among these gull and tern colonies, it was the rule to find several duck nests, and frequently one of the Canada Goose.

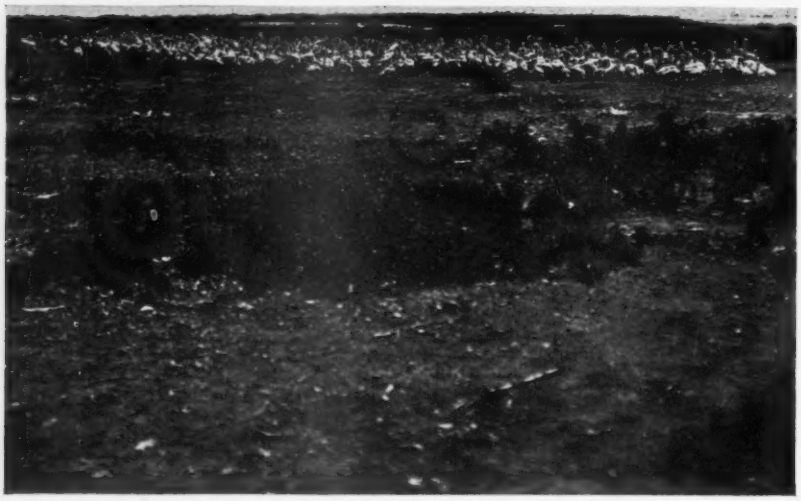
8. **Hydrochelidon nigra surinamensis.** BLACK TERN.— These birds were only occasionally seen at Quill Lake, passing over in twos and threes. On June 29, a flock of fifteen or twenty was seen hovering about the mouth of Pill Creek, a small stream entering Big Quill at its northwest end. Five days of almost continuous rain had preceded, and we inferred that the terns' nesting site in some other locality had been destroyed.

9. **Phalacrocorax auritus.** DOUBLE-CRESTED CORMORANT.— These birds were common at Quill Lake, but very wary. A nesting site of these birds was found in a colony of Ring-billed Gulls, as previously referred to. As the gulls destroyed the eggs of the cormorants in this case, it seemed improbable that the cormorants had made no effort to nest elsewhere. The location of another such site was long a mystery, and was only cleared up on July 5, when we found some fifty nests of the cormorant on a rocky island near the southern end of Big Quill. Nearby were broken eggs and recently abandoned nests of the White Pelican. The cormorant nests contained mostly three eggs each; a few were fresh, but the greater part highly incubated. There were a few nests containing young recently

hatched, and others with young a few days old. This colony, however, was insignificant when compared with one we found on July 9, about one and a half miles from the former. It was on an island chosen by the White Pelicans for their breeding ground. Here were between 200 and 300 young cormorants in the down averaging about one third grown; though there were some young but a few days old, and others about one-half grown. Some nests contained highly incubated and addled eggs. The nests were scattered about on the island in groups, numbering from twelve to thirty-five or forty nests. The young when able to hobble away from their own nests would gather in little companies nearby. A neighboring nest was usually occupied by as many birds as it would hold, the others huddling together around it. The young birds uttered a note like a crying baby, but shriller and harsher. They showed no fear of man, and while one observer was preparing his camera, one young bird pecked at his coat sleeve, mistaking the man for his parent. The young appeared to be fed upon minnows, which they would sometimes disgorge in a semi-digested state when alarmed. The parent birds left long before our canoe reached the island and did not return. Occasionally, however, solitary birds would fly by overhead. The nests of the cormorants were made of sticks and dry weed stalks, woven together with varying degrees of skill; sometimes the nest was almost as well built as that of a Red-tailed Hawk; at others it had fallen apart before the eggs were hatched.

The adult birds were not often seen in the fully adult plumage. Usually there was a considerable intermixing of white. None of the adults shot had the long crests behind each eye.

10. **Pelecanus erythrorhynchos.** WHITE PELICAN.— The most notable discovery of our trip was a nesting colony of this species. From our arrival we had hunted continually for the birds' breeding grounds, for they were abundant about the lakes. The nesting site was at last found, July 10, on an island at the extreme southern end of the lake. As we approached the island from a distance, an impressive sight was presented to us. A great bank of snow seemed to be looming above the water. When we were about five hundred yards distant, the birds began to take wing, executing that stately flight for which they are noted. Soon the space above the island was filled with several hundred great white birds, while in every direction small flocks were flying away in single file. This was a striking enough spectacle, but a still more interesting sight was the hundreds of white downy young that gathered together in several great herds about the island. Sprinkled among them were little groups of young cormorants. When the young pelicans were approached they uttered a groaning, grunting noise and herded together in the most ludicrous confusion. Scrambling and stumbling, they slowly moved away from the intruder, bearing all before them — patches of rank weeds, cormorant nests and the helpless young of both pelicans and cormorants. Sometimes they disgorged the contents of their pouches, usually a mass of salamanders (*Necturus maculatus*), though occasionally a "jock-fish"



YOUNG WHITE PELICANS. QUILL LAKE, SASKATCHEWAN.

(one of them was about a foot long) and some brook sticklebacks (*Eucolia inconstans*). A number of pelican eggs lay strewn about, and occasionally a nest contained two or three addled eggs. Even while we looked on, some Ring-billed Gulls attacked these eggs, breaking them sufficiently to let out the contents.

The nests of the pelicans were low mounds of sand, mixed with gravel and mud. The dimensions of two nests, in inches, were as follows:

Diam. at base.	Diam. at top.	Height outside.	Inside depth.
24	12	2½	2 (about)
20	9	3	2¼

Usually there was some loose aquatic weed lying about the rim of the nest. The nests were frequently placed side by side, but sometimes three or more feet apart. They were in groups of from twelve to twenty. Often a single cormorant nest was placed among those of the pelicans.

One pelican nest contained a young bird just hatched, and two eggs. The young bird, which made a noise like a young puppy, was of an orange flesh color. The young, when about the size of a hen, have the eyes slaty brown, bills light bluish gray, feet livid flesh color. The iris of the adult is a light bluish gray. Inside the pouches of both old and young birds were clusters of parasites — beetle-like insects with bodies striped with black and white.

The young pelicans when acting in concert made a noise like the distant honking of Canada Geese.

This colony was under observation from July 10 to 13, when the above notes were taken. Later it was visited daily from August 1 to 8. During the interval of our absence, the appearance of the island had greatly changed. The young of both cormorants and pelicans had left the nests and were able to leave the island by swimming. In one or two great bodies, they would swim out from shore, and remain a distance from the shore while we were on the island. Their location would vary according to the amount of moving about we did while on the island. When we remained in one spot the flocks of young birds would slowly move towards the island and eventually gather in a compact body on the shore. While we were moving about photographing or collecting material, the flock would remain strung out about one hundred and fifty yards or more from shore. The old birds would gather about a quarter of a mile distant on the shore of the mainland, or in a long line would remain at rest upon the water, three to four hundred yards away. They made a beautiful sight, looking like a fleet of white battle-ships. The spectacle which eclipsed all others in interest was when the young and old gathered upon the island. Then took place all the varied events of their unmolested domestic life. When the observer lay concealed in high rank weeds, the young birds would soon return, and the old birds in the course of an hour. The adults would alight among the young with a swish or swoop, and usually would single out their own young and begin feeding it. The process was very grotesque. The old bird would lower its head, open wide its bill,

and immediately the head and neck of the young would disappear into the parent's capacious pouch and gullet. With such energy would the young bird do its work that the parent was sometimes almost pushed off its feet. Often the two birds would struggle back and forth in a manner suggestive of a strenuous contest. The young birds, after being fed, would settle down and apparently go to sleep. The old birds would stand about preening, gaping, occasionally charging at an old or young bird which they regarded as an intruder.

Few of the old birds still retained the odd excrescence on the bill at the time of our first visit, and during our second visit, a bird thus ornamented was seldom seen. None of the adult birds we took had any pink lustre to the plumage, except sometimes at the tip of the tail, on its under side. The full-grown birds varied considerably in size.

The feeding grounds of the adults was a matter of much speculation on our part. The waters of Quill Lake are strongly alkaline, and it is doubtful if any fish live there, except possibly in and at the mouths of creeks entering the lake. Yet fish undoubtedly formed a part of the bird's diet, as we found several disgorged by the young birds, some of considerable size. We suspected that the birds had some distant feeding ground, and color was lent to this theory by the behavior of the birds each evening. Between five and seven flocks of from six to twenty-five individuals flew in a southwest direction over the prairie. This direction would lead them to the region of Lost Mountain Lake, some thirty-six miles distant, and possibly to some intervening lakes and creeks. Our brief and much localized observations could not settle such a matter definitely, however.

The number of the adult or young pelicans could not be told with certainty, but we estimated the number of the young birds to be between 750 and 1000. A photograph of a single group of young shows 250 birds. And this group could not have represented more than one-third of the total number of young. There must have been between 300 and 500 old birds.

The mortality among the young was considerable. Their dead bodies lay strewn about all over the island, which was about an acre in extent and perfectly flat. There were also colonies of the Ring-billed Gull and Common Tern on this island.

11. **Lophodytes cucullatus.** HOODED MERGANSER.— Three of these birds were seen on Middle Quill on June 23. They alighted close to an island where we lay concealed. One was shot but not recovered. They were all either females or immature males. On July 10, at the southern end of Quill Lake, two broods of four or five were seen. They were about two-thirds the size of the adult.

12. **Anas platyrhynchos.** MALLARD.— A common breeder at Prince Albert, and to a less extent at Quill Lake. Near the latter place, it probably would have been found much commoner in neighboring sloughs and ponds. It is locally known as "stock duck." Nests containing fresh eggs were found at Prince Albert on May 29 and June 1. The former contained eight fresh eggs; the latter nine fresh eggs.

13. **Chaulelasmus streperus.** GADWALL.— Common at Prince Albert; abundant at Quill Lake; probably the most abundant duck in the latter vicinity. Many nests were found. They were situated practically always upon islands in the long grass or among the weed stalks growing there. Often the nests were in patches of dead weeds; they were made exclusively of the finer weed stalks and the dead, cottony flowers. Only occasionally were some of the bird's own feathers used. This species often nested in close proximity to nests of the Baldpate and Pintail. The eggs of the Baldpate and Gadwall closely resemble each other. In two cases eggs of the Lesser Scaup Duck were found in Gadwall's nests. This species is a late nester, fresh eggs being first found in complete sets on June 24. A nest with young just pipping the shell was found on July 31. Many broods were seen in sloughs up to August 9. A nest with seven fresh eggs was found on July 4.

14. **Mareca americana.** BALDPATE.— Not common at Prince Albert. Abundant at Quill Lake. In nesting habits much like the Gadwall, though the Baldpate nests earlier. The first complete sets were found on June 12; the number of eggs laid ranged from nine to twelve. On July 5 a brood of three, a little smaller than Teal, were seen in company of the female parent.

15. **Nettion carolinensis.** GREEN-WINGED TEAL.— Not common at Prince Albert or Quill Lake. A nest containing nine fresh eggs was found at Prince Albert on June 3.

16. **Querquedula discors.** BLUE-WINGED TEAL.— This was one of the most abundant ducks at Prince Albert, but was not nearly so common at Quill Lake. Three nests were found at Prince Albert; May 31, with five fresh eggs, and June 7, are two of the dates.

At Quill Lake a nest was found on June 16 containing four fresh eggs. Later they were destroyed by the gulls.

17. **Spatula clypeata.** SHOVELLER.— This duck was abundant all through the portion of Saskatchewan which we travelled. The nests were next to impossible to find and we discovered but one. Mr. Barnes's notes read as follows: "June 20, in the midst of a tremendous rain storm, I stumbled upon a nest of this species built on the ground at the forks of a fallen and nearly limbless tree overgrown with brush. The bird flushed under my feet so close that her wings struck me as she rose. The nest was of grass and contained very little down. The eggs were fresh."

18. **Dafila acuta.** PINTAIL.— We were successful in finding many nests of this duck. It was abundant at both localities visited. The birds nest in the long prairie grass, or at the edge of willow thickets, usually close to water. At Quill Lake they showed a decided preference for islands as nesting sites. They are generous in the supply of down used to line their nests. Nests were found at Prince Albert as follows: May 25, three nests; May 26, nine eggs, one-third incubated; May 27, three eggs, one-half incubated; June 1, twelve eggs, two-thirds incubated. At Quill Lake, June 16, nine fresh eggs.

On June 11 flocks of males were frequently seen, only occasionally a female being among them. A brood of eight young, just hatched, was found on June 17.

19. **Marila americana.** RED-HEAD.— "Uncommon. One pair in a slough at Prince Albert where they were undoubtedly nesting on June 6." (Barnes.)

20. **Marila vallisineria.** CANVAS-BACK.— Common in both localities. Two nests at Prince Albert, one on May 30, in base of willow-bush standing in water with seven eggs, one-third incubated; the other in a tussock of dead grass in a small slough with six eggs, one-third incubated, June 5.

At Quill Lake nests were found from June 14 to June 21 with fresh eggs. One nest was in tall bulrushes growing out of a small creek; one in a bunch of dead bulrushes, standing in a very conspicuous position. The third nest was in low grass on a flat, sandy island. Very little down was found in these nests. The birds as a rule appeared tame and flushed almost under one's feet. Flocks of male birds were seen at about the time the females appeared with their broods (July 1). Several broods were seen on June 29.

21. **Marila affinis.** LESSER SCAUP.— Common at both localities. A nest containing ten fresh eggs was found at Prince Albert on June 2. It was in long, dry sedge grass at the edge of a pond. At Quill Lake they nested commonly on low flat grassy islands. The Lesser Scaup nests "were the flimsiest in construction of all the ducks' nests found, being uniformly a mere depression in a small bunch of grass, and seldom having much of any down in them" (Barnes). On July 4 the adult birds, mostly males, were seen in an immense flock on the north shore of Middle Quill. Large flocks were seen in various parts of the lake from this time on. On June 29 a brood of this species was seen and several broods of Canvas-back and Widgeon. It appeared to be the date when many ducks brought out their broods. A nest with ten eggs was found on July 4.

22. **Clangula clangula americana.** GOLDEN-EYE.— Golden-eyes, presumably this species, were seen at Quill Lake on June 7, on July 3 and 4, flocks of ten, three, two, and two Golden-eyes were seen. On July 10, one was seen.

23. **Charitonetta albeola.** BUFFLE-HEAD.— Small flocks of this species were seen frequently during our stay. They were commonest about the rocky and gravelly shores of Little Quill Lake. The flocks were composed mostly of males. We believed the species to be nesting in the vicinity.

24. **Oidemia deglandi.** WHITE-WINGED SCOTER.— Small flocks seen occasionally; commonest in Little Quill Lake.

25. **Erismatura jamaicensis.** RUDDY DUCK.— Plentiful about Prince Albert, where it was either breeding or preparing to breed, as the birds were almost universally in pairs.

26. **Branta canadensis.** CANADA GOOSE.— "This bird we found numerous on Quill Lake. Seven different nests were found on small grassy islands along the north and east shore, each containing from five to seven

1. NEST OF CANADA GOOSE. QUILL LAKE, SASKATCHEWAN.

2. NEST OF MALLARD. QUILL LAKE, SASKATCHEWAN.

eggs. All were much incubated, and one set of five eggs hatched June 12. A strange thing was that we saw no young geese except the brood which we found before they had left the nest. Several times large flocks containing from ten to thirty-five birds were seen.

"All of the nests were merely piles of dead grass placed usually near the ends of the islands. On the grass there was a depression in the top lined with down from the goose. One nest was on the very edge of a Ring-billed Gull colony, against the base of which two different gulls had constructed their nests." (Barnes.)

On June 17 a nest was found containing seven eggs. The female flew when Mr. Barnes was about seventy-five yards distant, uttering deep melancholy honks. On hearing them the male goose joined her and together, a short distance out in the lake, they kept up an anxious honking.

A nest was found on July 11 from which the bird was flushed. An odd looking egg was all that was in the nest. It looked like an egg of the Canvas-back, but it may have been a runt goose egg badly nest stained. A set of six highly incubated eggs were given to a farmer to place under a hen. They all hatched. The hen cared for them for about two weeks when a tame goose was substituted. In September a letter informed us that the whole brood was as large as adults and had once taken wing and flown to the lake. They were easily recaptured. On June 16 Canada Geese were seen flying over the lake in groups of two, eight and three; on June 17 flocks of twenty and ten, and several of two and three.

27. **Botaurus lentiginosus.** BITTERN.— "But one specimen seen at Quill Lake." (Barnes.) July 5 another was seen on the south shore. The bird was common about Prince Albert.

28. **Grus americana.** WHOOPING CRANE.— "June 14 we saw a splendid specimen of this species standing on the wide muddy flat at the north end of Big Quill Lake. We examined it carefully with our glasses, and endeavored to stalk it. This was the only specimen seen. Our assistant, who lives on the shore of the lake, told us he had killed an adult specimen of this species some fifty miles north of Quill Lake during the present spring. His younger brother, a lad of fifteen, told us that a pair of birds had been seen along the east side of Big Quill Lake nearly all the spring." (Barnes.)

29. **Grus mexicana.** SANDHILL CRANE.— "Not a common bird, though at least one pair nested near Big Quill Lake. A nest was found on June 20 in the swamp where the water was from eight to ten inches deep, and through which had grown large swamp grass to the height of a man's shoulder. Among this a nest was built which appeared very much like the upper third of an ordinary hay cock, with a depression at the top. One egg, apparently about one-third to one-half incubated, with the side torn out (probably by some animal), was found on the edge of the nest. The birds were seen at the time the nest was discovered within a few yards of the nest." (Barnes.)

About August 1 the birds were common. We saw as many as six to-

gether. A local report, in which they were referred to as "turkeys," describes them as abundant during the fall near the southern shore of Big Quill Lake.

30. **Porzana carolina.** SORA RAIL.— Probably common but rarely seen. A nest was found at Prince Albert containing eggs. Another at Big Quill Lake, on June 12, with eleven fresh eggs. The latter was built in the rushes by a creek, and was about a foot above the water, well made and well hidden. We found another nest containing twelve eggs.

31. **Coturnicops noveboracensis.** YELLOW RAIL.— "June 21, immediately following a heavy rain which flooded nearly the whole country, a single specimen of this rare bird was flushed from under our horses' feet as we crossed a swampy piece of flooded territory where the water was a few inches deep and the grass very sparse. Having no gun, we could not secure it." (Barnes.)

On July 14, at about sunset, a bird was flushed which could have been only a Yellow Rail. It flushed but a few feet from the observer. Its underparts were plainly seen, and its flight was rapid but distinctly rail like. It was near the locality of the first mentioned bird and in a similar situation.

32. **Fulica americana.** COOT.— Abundant at Prince Albert where many nests were found. None were seen at Quill Lake, probably because of the strong alkali water of the lake.

33. **Steganopus tricolor.** WILSON'S PHALAROPE.— Common about Quill Lake and evidently breeding, but we found no nests. Dissection of several specimens showed partially developed eggs in the bird, one on June 17 with a small yolk. One bird we were unable to drive from a spot in a partially overflowed slough. She flew about us uttering plaintive cries. When flushed the birds utter a peculiar grunting noise.

34. **Recurvirostra americana.** AVOCET.— One seen July 4 in Middle Quill Lake.

35. **Gallinago delicata.** WILSON'S SNIPE.— Seen only on August 10 in a mud hole north of Big Quill, probably migrating.

36. **Micropalama himantopus.** STILT SANDPIPER.— Two were shot at Quill Lake on July 20; they were the only ones seen, and are a male and female in summer plumage.

37. **Pisobia fuscicollis.** WHITE-RUMPED SANDPIPER.— On our arrival at Quill Lake, June 10, we saw large flocks of sandpipers about the shores and on the islands of the lake. A few days later these flocks disappeared. Several random shots brought down specimens of this species and the following.

38. **Pisobia bairdi.** BAIRD'S SANDPIPER.— The remarks under the preceding species apply also to this species. In a pair taken on June 16 the testes of the male were small and the ovaries of the female inactive.

39. **Ereunetes pusillus.** SEMIPALMATED SANDPIPER.— Flocks of small sandpipers were common on June 11; not again seen until July 3 when a flock of fifteen were noted. On July 4 four were seen, and on this date

1. NEST OF LONG-BILLED CURLEW. QUILL LAKE, SASKATCHEWAN.

2. NESTS OF COMMON TERN. QUILL LAKE, SASKATCHEWAN.

another flock of twelve. All the specimens collected proved to be this species, and hence others seen are referred to it. A female taken on June 16 had ovaries showing recent activity.

40. **Calidris leucophæa.** SANDERLING.— These birds were found tolerably common at Quill Lake on our arrival June 10, but they disappeared a few days later.

41. **Totanus flavipes.** LESSER YELLOW-LEGS.— Three were seen on July 5.

42. **Helodromas solitarius.** SOLITARY SANDPIPER.— One seen on July 5 at Quill Lake. "One seen in the muskeg south of Prince Albert from the railroad train June 5." (Barnes.)

43. **Catoptrophorus semipalmatus inornatus.** WESTERN WILLET.— This species was common at Quill Lake and exceedingly noisy. Without doubt it was breeding, but continuous search failed to find any nests. The tails of several species show quite a distinct barring although in size and coloration they are typically Western Willets. On the 10th of July a Willet was seen sitting upon the water like a Phalarope and was put to flight by our canoe.

44. **Bartramia longicauda.** UPLAND PLOVER.— This species we found at Prince Albert and at Quill Lake but it was not common at either place.

45. **Actitis macularia.** SPOTTED SANDPIPER.— Two were seen July 4 at Quill Lake.

46. **Numenius americanus.** LONG-BILLED CURLEW.— Abundant at Quill Lake, where their loud protesting cries were constantly in our ears. Though there must have been many nests in the vicinity, we could find but one. This was taken June 17, and contained but two eggs, highly incubated. The nest was thinly lined with grass and situated on a piece of burnt-over prairie adjoining the lake. It lay among some bunches of willows, bleached, fire scarred, and scattered about. "The female on the nest stretched herself flat on the ground as we approached, her long neck extending in front of her like a brown stick. She seldom flushed till we were very close upon her." (Barnes.) Young just able to fly were found on July 5, and young two-thirds grown on July 9. Our assistant at Quill Lake wrote us that all the Curlew left the lake about the time of our departure, August 11, and that he had seen none there since.

47. **Oxyechus vociferus.** KILLDEER.— Common at Prince Albert. Less so at Quill Lake. A nest containing four eggs, about one-fourth incubated, was found at the former place May 22.

48. **Ægialitis semipalmata.** SEMIPALMATED PLOVER.— "This species was seen in considerable numbers for the first few days after our arrival. Shortly afterward they disappeared entirely." (Barnes.)

49. **Ægialitis meloda.** PIPING PLOVER.— Common at Quill Lake. A nest containing four eggs was found on an island on July 4. Subsequently the species was found distributed along the south shore of Quill Lake in the proportion of about one pair of birds to the mile. At this time, July 4–5, nearly every pair had broods of young, varying in size from birds

just hatched to those the size of a sparrow. On June 14 Mr. Barnes saw a pair on an island acting as if they were nesting. A female taken on June 24 had ovaries apparently approaching activity. It was fat and moulting.

50. **Arenaria interpres morinella**?. RUDDY TURNSTONE.— A Turnstone was seen in the Pelican colony island about August 7. It doubtfully is referred to this subspecies.

51. **Bonasa umbellus umbelloides.** GRAY RUFFED GROUSE.— A specimen of this race was taken on May 26 at Prince Albert, drumming upon a log. It was common in that locality, but was not seen at Quill Lake. The tarsus is unusually heavily-feathered.

52. **Tympanuchus americanus.** PRAIRIE CHICKEN.— This species and the Prairie Sharp-tailed Grouse occurred in about equal numbers at Quill Lake, though they were widely scattered. Two broods were discovered, one on July 4 just able to fly, one of which was preserved as a specimen; the other on July 14. The young of this latter brood were about the size of Quail, and were dusting themselves in the road.

53. **Pediœcetes phasianellus campestris.** PRAIRIE SHARP-TAILED GROUSE.— Common at Prince Albert, less so at Quill Lake where it was very much scattered.

54. **Zenaidura macroura carolinensis.** MOURNING DOVE.— Rare at Quill Lake. Seen on July 3, 9, and 14, and on August 9.

55. **Circus hudsonius.** MARSH HAWK.— Seen throughout the territory visited but nowhere abundant.

56. **Buteo borealis calurus.** WESTERN RED-TAILED HAWK.— Common at Prince Albert and less so at Quill Lake. A nest containing three eggs, one-half incubated, was found on June 1. The female parent, an immature bird, was taken. The nest was about twenty-five feet up in a poplar tree standing in a thicket. Mr. Barnes took a set of two eggs on June 7; one egg was on the point of hatching and the other was addled.

57. **Buteo swainsoni.** SWAINSON'S HAWK.— "This species was found common at all places where we stopped. At Quill Lake it was especially plentiful and numbers of nests were found, invariably containing two eggs. June 13 and 14 nests were taken. They were all similarly located, being from six to ten feet up in small bunches of willows or other small growth, scattered in copses over the prairie. The eggs were about half incubated." (Barnes.)

58. **Archibuteo lagopus sancti-johannis.** ROUGH-LEGGED HAWK.— "One bird of this species was seen on June 5, fourteen miles southeast of Prince Albert." (Barnes.)

59. **Falco sparverius.** SPARROW HAWK.— One seen on June 27.

60. **Asio wilsonianus.** LONG-EARED OWL.— A nest of this species with the parent bird upon it was found at Prince Albert on May 29. The nest contained eggs.

61. **Asio flammeus.** SHORT-EARED OWL.— One was flushed from the grass near Quill Lake on June 10, the only one seen.

62. **Bubo virginianus subarcticus.** ARCTIC HORNED OWL.— An adult female of this species was taken at Prince Albert on June 5. The stomach contained the remains of a small mammal.

63. **Dryobates pubescens medianus.** DOWNY WOODPECKER.— Tolerably common about Prince Albert. A female was flushed from a hole in a dead poplar May 31. Above it, in the same tree, was found a hole containing a nest of the Tree Swallow.

64. **Sphyrapicus varius.** YELLOW-BELLIED SAPSUCKER.— Common about Prince Albert, where it was undoubtedly nesting.

65. **Colaptes auratus luteus.** NORTHERN FLICKER.— Common at all places visited.

66. **Colaptes cafer collaris.** RED-SHAFTED FLICKER.—Mr. Barnes believed this species to be equally common with the preceding species.

67. **Chordeiles virginianus henryi.** WESTERN NIGHTHAWK.— "This species was observed at both Quill Lake and Prince Albert." (Barnes.)

68. **Tyrannus tyrannus.** KINGBIRD.— Common in all localities visited; especially so at Quill Lake. A nest was found in a low willow tree at latter place containing three newly hatched young July 14.

69. **Sayornis phœbe.** PHŒBE.— Common at Prince Albert; a beautiful nest of moss, containing fresh eggs, was found on the 26th of May, in a well.

70. **Empidonax minimus.** LEAST FLYCATCHER.— Quite common in poplar thickets or "bluffs" between Big and Little Quill Lakes.

71. **Otocoris alpestris leucolæma.** DESERT HORNED LARK.— Horned Larks were common in all places visited, and judging from the number seen from the train windows they were widely distributed throughout Saskatchewan. Two immature specimens were the only ones taken; they were useless for identification and the local birds are consequently referred to the above form, to which they theoretically belong.

72. **Corvus brachyrhynchos.** CROW.— Abundant at Prince Albert and Quill Lake. Very distructive to ducks' nests. We found many of these nests in which the eggs were partly or wholly destroyed by crows. It was a common sight to see crows walking through and carefully exploring the grassy places where ducks were likely to nest. Many nests of the crow were found, usually placed six or seven feet from the ground in poplar thickets, each containing (June 12 to 17) four fresh eggs. One nest at Quill Lake was situated on the ground, at the forks of the dead branches of a fallen and nearly burned up weather-bleached poplar tree. This was on June 23, at which time the nest contained young with pin feathers.

73. **Dolichonyx oryzivorus.** BOBOLINK.— Common at Quill Lake, scattered over the prairie in small colonies or isolated pairs. One partly built nest was found June 24.

74. **Molothrus ater.** COWBIRD.— Exceedingly abundant. Eggs of this species were found in the nests of the following: Swamp Sparrow, Red-winged Blackbird, Western Savannah Sparrow, Clay-colored Sparrow, Leconte's Sparrow. One Western Savannah's Sparrow's nest con-

tained four Cowbird's eggs and none of the rightful owner, all partly incubated.

75. **Xanthocephalus xanthocephalus.** YELLOW-HEADED BLACKBIRD.— Abundant at Prince Albert but only locally common about Quill Lake. At the former place many nests with eggs were found. Numbers of nests with fresh eggs were found May 29.

76. **Agelaius phœniceus fortis.** THICK-BILLED REDWING.— Abundant throughout the territory visited. Many nests were found. Young just able to fly were common about June 29. Five males collected are by no means typical of the above race. When compared with sixteen specimens, mostly from the Atlantic States, the Saskatchewan birds were equal in size to eleven, while they were actually smaller than five of the eastern birds. Still the Saskatchewan birds average larger than typical *A. p. phœniceus*. The five Saskatchewan birds measure as follows: Wing, 121; tail, 95 ; culmen, 25. Unfortunately no females from Saskatchewan were collected.

77. **Sturnella neglecta.** WESTERN MEADOWLARK.— Common at all places visited. A nest found May 31 at Prince Albert contained six eggs one-fourth incubated, and a nest with fresh eggs was found June 12 at Quill Lake.

78. **Icterus galbula.** BALTIMORE ORIOLE.— Common at Prince Albert; less so at Quill Lake.

79. **Euphagus cyanocephalus.** BREWER'S BLACKBIRD.— Common throughout the territory visited. No nests were found. On July 3 the Brewer's Blackbirds had begun to flock, when a flock of fifty to seventy-five were observed. A few Red-wings were among them, but the Brewer's Blackbirds were often seen vigorously driving them from their midst.

80. **Quiscalus quiscula æneus.** BRONZED GRACKLE.— Tolerably common at both localities. Mr. Barnes took a nest with fresh eggs on June 9 at Saskatoon.

81. **Astragalinus tristis.** AMERICAN GOLDFINCH.— Tolerably common at Prince Albert. Seen at Quill Lake on June 24.

82. **Plectrophenax nivalis.** SNOW-BUNTING.— Seen quite frequently in ploughed fields along the Canadian Pacific Railway between Winnipeg and Regina on May 22. The birds were in the black and white breeding dress.

83. **Calcarius ornatus.** CHESTNUT-COLLARED LONGSPUR.— Abundant about prairies surrounding Regina and Quill Lake. "Several nests were found June 4 at Regina. All were situated on the ground at the foot of a small weed or bush, on the open prairie where the grass was short, and contained eggs well advanced in incubation. The nests were invariably found by watching the birds, which would fly back and forth in a semicircle as I stood still. Finally they would alight near the center of the semicircle almost opposite where I stood and creep through the grass stealthily and settle upon the nest." (Barnes.) A fledgling was seen on July 5.

84. **Rhynchophanes mccowni.** McCOWN'S LONGSPUR. — "I found McCown's Longspur plentiful at Regina where I took one nest June 4. It was located in a depression near the road on the open prairie where there was practically no grass. It had been run over by a wagon, crushing the nest out of shape. The bird, however, was on the nest and the eggs were uninjured." (Barnes.)

85. **Poœcetes gramineus confinis.** WESTERN VESPER SPARROW.— Plentiful at Prince Albert and Quill Lake.

86. **Passerculus savanna alaudinus.** WESTERN SAVANNAH SPARROW.— Common at Prince Albert. Abundant at Quill Lake, where it was nesting. Nests were usually sunk deep in the ground at the base of a bunch of grass on the prairie. The birds would seldom flush from the nest till nearly trodden upon. The eggs were usually four, occasionally five, and were fresh from June 10 to 20. On July 14 a nest with two eggs and one of the Cowbird found. Fledglings just able to fly were seen quite commonly on July 3. They were usually flushed from the grass.

87. **Passerherbulus lecontei.** LECONTE'S SPARROW.— This species was common in some localities about Prince Albert and was plentiful in the alkali grass along the edge of Quill Lake. One nest was found on June 22 with two sparrow eggs and one of the Cowbird. The parent bird was flushed from the nest. It was situated at the edge of a willow thicket under a flattened wisp of dead grass, through a minute hole in which the bird descended perpendicularly into the nest. The nest was found abandoned on June 29, one sparrow egg only remaining. On July 14 a Leconte's Sparrow was flushed from her nest in a reclining wisp of dried grass. The nest was entered by a small hole in the wisp above the nest. This habit of nesting in a bunch or tussock of dead grass, in which the entrance hole is a mere parting of the grasses, and very inconspicuous, seems characteristic of this species. The above nest contained four young with pinfeathers on the feather tracts.

88. **Passerherbulus nelsoni.** NELSON'S SPARROW.— One specimen taken on June 11.

89. **Zonotrichia albicollis.** WHITE-THROATED SPARROW.— Tolerably common at Prince Albert, its notes were several times heard at night coming from a poplar thicket.

90. **Spizella pallida.** CLAY-COLORED SPARROW.— Abundant at Prince Albert and Quill Lake, where it was one of the most characteristic birds of these regions. Its monotonous insect-like trill was heard from all sides on several mornings. The nests were usually placed in small wild rose bushes or tangled weeds on a sloping hillside, very close to the ground. They usually contained four eggs. Nests with fresh eggs were found at Prince Albert June 1 and June 7, and at Quill Lake June 16. The song of this bird is a rasping *quee-quee-quee.*

91. **Spizella pusilla arenacea.** WESTERN FIELD SPARROW.— "Rare: only one seen. This I flushed from a nest fourteen miles southeast of Prince Albert on June 7. The eggs were fresh." (Barnes.)

92. **Melospiza melodia melodia.** SONG SPARROW. Or, **Melospiza**

melodia juddi. DAKOTA SONG SPARROW. — Abundant at Prince Albert where it was a common nester. Common at Quill Lake. Fresh eggs observed on June 6 and 7. No specimens taken, hence theoretically referred to one of the above species. Some heavily wooded islands were favorite resorts of this bird.

93. **Melospiza georgiana.** SWAMP SPARROW.— A pair of these birds was seen at Prince Albert on June 7. They behaved as if their nest was close by. Mr. Barnes reports it as common.

94. **Pipilo maculatus.** ARCTIC TOWHEE.— One of these birds was heard in a poplar thicket on July 14.

95. **Zamelodia ludoviciana.** ROSE-BREASTED GROSBEAK.— Three of these birds were seen at Prince Albert on June 7.

96. **Calamospiza melanocorys.** LARK BUNTING.— One of these birds was identified with reasonable certainty at Prince Albert.

97. **Progne subis.** PURPLE MARTIN.— Seen at Winnepeg and Quill Lake. In the latter place a pair was nesting in the eaves of a settler's cabin at the edge of rather heavy timber.

98. **Petrochelidon lunifrons.** CLIFF SWALLOW.— Abundant at Prince Albert and nesting.

99. **Hirundo erythrogaster.** BARN SWALLOW.— Several pairs were found nesting under a bridge at Quill Lake on June 23. Others were seen.

100. **Iridoprocne bicolor.** TREE SWALLOW.— Common breeder at Prince Albert. Nest found in a hole in a tree on May 31. Tolerably common at Quill Lake.

101. **Riparia riparia.** BANK SWALLOW.— "Not uncommon at Prince Albert." (Barnes.)

102. **Bombycilla cedrorum.** CEDAR WAXWING.— Two seen on July 6.

103. **Lanius ludovicianus excubitorides.** WHITE-RUMPED SHRIKE.— "June 8 I found a Shrike's nest six feet up in a small bunch of willows at the edge of a swamp. It contained six highly incubated eggs. No parent bird was seen." (Barnes.) On July 14 an adult was seen feeding two young nearly as large as itself. A single individual was seen on July 9.

104. **Vireosylva olivacea.** RED-EYED-VIREO.— Not uncommon at Prince Albert and Quill Lake.

105. **Vireosylva philadelphica.** PHILADELPHIA VIREO.— "Not uncommon at Prince Albert." (Barnes.)

106. **Vireosylva gilva swainsoni.** WESTERN WARBLING VIREO.— One specimen was taken on June 1. Others, presumably of this species, were frequently seen at Prince Albert and Quill Lake.

107. **Dendroica æstiva.** YELLOW WARBLER.— Common at both localities. A nest was found at Prince Albert on June 6. The species was observed at Regina on May 22.

108. **Dendroica maculosa.** MAGNOLIA WARBLER. — Observed at Regina on May 23.

109. **Vermivora peregrina.** TENNESSEE WARBLER.— Observed in considerable numbers at Regina on May 23.

110. **Anthus spraguei.** SPRAGUE'S PIPIT.— A specimen was taken at Quill Lake on June 30. Others were seen.

111. **Dumetella carolinensis.** CATBIRD.— Several were seen at Prince Albert.

112. **Toxostoma rufum.** BROWN THRASHER.— A settler who was familiar with this bird in "the States" reported that a pair nested on his place at Quill Lake in June, 1909.

113. **Troglodytes aëdon parkmani.** WESTERN HOUSE WREN.—Tolerably common in poplar thickets at Quill Lake.

114. **Cistothorus stellaris.** SHORT-BILLED MARSH WREN.— Common about the northern end of Big Quill in long prairie grass adjoining the shore of the lake. One specimen was taken on June 22.

115. **Telmatodytes palustris.** LONG-BILLED MARSH WREN — Not uncommon in the vicinity of Prince Albert where fresh eggs were found on June 6 and 7.

116. **Hylocichla fuscescens salicicola.** WILLOW THRUSH.— Common at Prince Albert. Oftener heard singing than seen.

117. **Planesticus migratorius.** ROBIN.— Robins were tolerably common at Prince Albert. But one specimen collected. This is intermediate between the eastern and the western form. There is a white spot at the tip of one of the outer tail feathers, but it is lacking on the other. However, the bird has the more rufous breast and smaller size of the eastern form, so is referred to *migratorius*. Prof. McCown states that the eastern Robin occurs in this region, but other investigators have found the western form *propinqua*. (But see Auk, Vol. XXV, p. 34, Jan. 1908.)

118. **Passer domesticus.** ENGLISH SPARROW.— Seen about Prince Albert and at the farm where we staid, eight miles from there. Seen at Quill Lake on June 27.

ADDENDA.

Mr. W. B. Mershon of Saginaw, Mich., visited Quill Lake with a party of sportsmen on October 8, remaining several days. Mr. Mershon has kindly written us, giving some bird notes that are interesting because relating to conditions at Quill Lake during the fall, while ours are all summer notes. Mr. Mershon mentions a snowstorm on October 11, and a temperature of 20 degrees above on that date, with the ponds covered with thin ice. The following species are mentioned:

Phalacrocorax auritus. DOUBLE-CRESTED CORMORANT.— A flock of 5 was seen on October 9. As these are the only ones observed during a stay of four days, it is probable that most of the birds seen during the summer had departed at this date.

Anatidæ. Ducks.— Ducks were plentiful, but were flying high and frequenting the middle of the lake. They did not decoy well, nor in other ways offer the sportsman good shooting. The species mentioned are Canvas-back, Blue-bills, Redheads, Widgeon, and Mallards. As Mr. Mershon is a sportsman well acquainted with the ducks of North America, and as he mentions only such species as we found common during our stay, it is probable that a number of species of ducks avoid Quill Lake to a great extent.

Oidemia fusca. Velvet Scoter.— "I noticed a great many flocks of Velvet Scoter, and succeeded in killing one fine specimen that I am now having mounted." (Mershon.)

Branta canadensis. Canada Goose.— Geese were reported as thick in wheat stubble west of Quill Lake.

Olor columbianus. Whistling Swan.— "I saw quantities of swans." (Mershon). Date, October 9.

Charadrius dominicus. Golden Plover.— One seen on October 9, and two on October 11.

Bonasa umbellus umbelloides. Gray Ruffed Grouse.— Contrary to our experience, Mr. Mershon found this bird not rare at Quill Lake, getting three specimens and seeing another. He comments upon the unusually heavy feathering of the tarsus of the birds taken.

GENERAL NOTES.

A Parasitic Jaeger near Ottawa, Ontario. — A bird of the year of *Stercorarius parasiticus* was brought to the undersigned during the first week of September, 1909. It had been shot on the 4th of that month on the Ottawa River, near where the Lievre empties into it. It was a male; the stomach was empty. The nearest localities given in Macoun's latest catalogue for this species are the Great Lakes (Fleming) and the Gulf of St. Lawrence (Dionne). If I remember correctly, there had been no great storms or other violent meteorological disturbances previous to the date of capture. It therefore seems somewhat remarkable that this species should be found in the place mentioned.— G. Eifrig, *Addison, O.*

European Widgeon (*Mareca penelope*) **in Florida.**— I want to record the taking of two specimens of *Mareca penelope* near Titusville, Florida, on February 20, 1907. Both were full-plumaged adult males and were shot by N. F. Emmons of Boston. One bird he had mounted for himself and the other, which he presented to me at the time, is in my collection. The only mention that C. B. Cory makes of this bird in his book entitled

'Key to the Water Birds of Florida' is that "it occasionally wanders to our shores." In Bulletin No. 26 of the Biological Survey, Wells W. Cooke in his article 'Distribution and Migration of North American Ducks, Geese and Swans' says, in respect to the European Widgeon, that "on the Atlantic coast the dates are almost entirely in the fall and winter.... there are only three records after February 5." If this is the case, and I find no evidence to the contrary, this is the fourth record only after the date he mentions, for the Atlantic coast.— S. PRESCOTT FAY, *Boston, Mass.*

Two Records of the Golden-eye at De Funiak Springs, Florida. — On December 5, 1907, an adult female Golden-eye Duck (*Clangula clangula americana*) was taken on a small fresh-water lake near De Funiak Springs, Florida. The specimen was taken by M. Harry Moore, and mounted by him. It was sent to the American Museum of Natural History, and identified by W. De W. Miller from an examination of the specimen.

On November 20, 1909, an adult female of the same species was seen on the same lake. It was observed under such favorable conditions that there was no doubt in my mind as to the identification.

Prof. Wells W. Cooke says that this is "almost the extreme limit of its southern range, as it has been noted only a few times in Florida."— G. CLYDE FISHER, *De Funiak Springs, Florida.*

Nesting of the Black Duck in Yates County, N. Y. — May 26, 1907, I found a nest of the Black Duck (*Anas rubripes*) in Potter Swamp. The locality was a young second growth of maple, beech and ash of four to eight inches in diameter. The ground was nearly dry and covered with a rank growth of ferns and skunk cabbage. The female was flushed from a bunch of six small maples growing from a mound about three feet above the surrounding ground and there in the center of the bunch of trees were six eggs layed on a few broken fern stems and dead leaves.

On my next visit (June 2) there were nine eggs and a nice lot of down had been placed around and among the eggs. A farmer told Mr. C. F. Stone of finding a nest of this duck in Potter Swamp in 1892 or 1893, but this is the first authentic record to my knowledge.— VERDI BURTCH, *Branchport, N. Y.*

A Bittern taken in West Florida.— On November 17, 1909, an adult male Bittern (*Botaurus lentiginosus*) was taken near De Funiak Springs, Florida. This is the first individual of this species that I have seen in this vicinity in the two and one-half years that I have been here, so I conclude that it is probably somewhat rare. This specimen, which was in excellent condition, was taken in a dry 'broom-sedge' field,— a rather unusual place, it seemed to me. Its stomach contained two grasshoppers which it had probably captured in this field. The bird was killed by Wm. F. Jones while out quail hunting.

While the large Bittern may be rare in this section, its smaller relative, the Least Bittern, is quite common in suitable localities, and breeds here.— G. Clyde Fisher, *De Funiak Springs, Florida.*

Northern Phalarope in Bladen County, North Carolina.— On September 22, 1909, I saw three phalaropes on White Lake. It was a little after sundown and I was out on the lake, fishing, without a gun. I followed them up and was certain of their identity (as to being phalaropes, that is), getting within fifteen yards or so of them. The day following, September 23, I was out on the lake in both morning and afternoon, covering the lake pretty thoroughly, but none were seen. I went out fishing about sundown, with gun this time, and saw five; flushed them just out of range. They went off quite a distance and then circled round almost to the place from which they were flushed. I paddled up quite close and killed three, all of which proved to be Northern Phalaropes (*Lobipes lobatus*). All were in fair bodily condition and were very active on the water, dodging about in a most erratic manner after food and reminding me very much, in their movements, of a whirligig beetle. Occasionally one would fly a few feet as if attracted by an insect or other food item. They were not at all shy. They flew well and strongly, reminding me of some of the sandpipers, the flight being always near the surface.

On the same date I saw two Black Terns (*Hydrochelidon nigra surinamensis*) on the lake. On the next day, September 24, I saw several very light colored terns which I suppose were immature Black Terns. These were fishing, a thing I have never seen Black Terns indulge in.— H. H. Brimley, *Raleigh, N. C.*

Wilson's Snipe Wintering near Boston, Mass.— Mr. C. A. Clark of Lynn informs me that at least seven Wilson's Snipe (*Gallinago delicata*) are wintering not far from that city in a meadow on the northeast side of Hall's Brook, which runs into Flax Pond. There have been open places in the brook all winter and the birds come out of the meadow and are seen "boring" into the mud with their long bills. When everything has been locked in frost and snow they have been seen thrusting their long bills down through the snow. The flock was first noticed by Mr. Clark on November 12, 1909, and he has watched them up to date, January 22, 1910.

I have notes of the occurrences of single snipe occasionally about brooks and springs in January, but have never before heard of such a number of them here in winter. The weather of the month has been very severe.— E. H. Forbush, *Boston, Mass.*

Another Golden Eagle taken in West Florida.— On February 3, 1910, an adult Golden Eagle (*Aquila chrysaëtos*) was taken about nine miles north of De Funiak Springs, Florida. This is the fourth individual of this species taken in this vicinity during the past two and one-half years. (See 'The Auk,' XXVII, 1910, 80.)— G. Clyde Fisher, *De Funiak Springs, Florida.*

Another Pigeon Hawk in Maine in Winter. — I saw about noon, February 26, 1910, a Pigeon Hawk (*Falco columbarius*) flying in a southerly direction over Temple Street, Portland, not far above the tops of the buildings. At the same time I noted a large flock of English Sparrows high in the air. No doubt they had aided in attracting the hawk to this busy part of the city.— NATHAN CLIFFORD BROWN, *Portland, Maine.*

Further Notes on the Occurrence of the Pigeon Hawk (*Falco columbarius*) **in Winter, near Portland, Maine.**— On December 30, 1905, I saw at Fish Point, the southeastern extremity of Portland, a Pigeon Hawk flying toward the city. The next winter a male was shot at Westbrook, Maine, on December 1 (1906), by Mr. Ralph H. Norton, and is preserved in the writer's collection. A female in adult plumage was shot in Scarborough on February 22, 1907, by Mr. J. H. Coalbroth. The latter case was reported to me, and I visited Mr. Coalbroth a few days later and saw the bird, freshly mounted for his collection. These occurrences are recorded in Journ. Maine Orn. Soc., IX, p. 9.

On December 11, 1908, I saw another in Deering's Oaks, Portland. This one has been alluded to, without exact dates, by the late Wm. H. Brownson, in the Portland 'Daily Advertiser' of January 2, 1909; also in Journ. Maine Orn. Soc., XI, p. 10. In the same number of the 'Advertiser' Mr. Brownson made another record, one seen by him at Delano Park, Cape Elizabeth, "a few days later." I am able to furnish the exact date as December 13.

We therefore have with the record just made by Mr. N. C. Brown, six known instances of the occurrence of the Pigeon Hawk in or near Portland, Maine, between December 1 and March 1.— ARTHUR H. NORTON, *Portland, Me.*

Barn Owl in Colorado.— On May 24, 1909, the carpenter of the cattle ranch of Mr. Jacob Scherrer caught an adult Barn Owl (*Aluco pratincola*) in the barn of the home ranch, which is located about eighteen miles north of Burlington, Colo., the exact location of this home ranch being in Sec. 36, T. 5 S., R. 45 W. This places the spot of record within a few miles of the east line of Colorado. The bird was uninjured, in perfect plumage, and was kept at the ranch a few days when it was killed and brought in the flesh (May 29, 1909) to Mr. A. T. Allen, taxidermist, of Denver, at whose place the undersigned saw it. The sex was undetermined. This is, according to Cooke's List, the eleventh record for Colorado.— W. H. BERGTOLD, *Denver, Colo.*

Snowy Owl in Yates County, N. Y.— Several times in the past five or six winters I have been told of Snowy Owls (*Nyctea nyctea*) being seen on the hills west of Branchport, N. Y., but have never had actual proof of one being seen until Dec. 20, 1909, when a farmer shot and winged a heavily barred female. He kept it alive for over a week when it died and he brought it to me.— VERDI BURTCH, *Branchport, N. Y.*

Bubo virginianus occidentalis in Michigan.— On examining the series of Great Horned Owls in the collection of the U. S. National Museum I find there is a specimen of *Bubo virginianus occidentalis* from Michigan. This specimen, No. 200,415, was caught in a trap, January 5, 1906, by Mr. C. McLaughlin at Robbins, Ontonagan Co., and by him sent to the Museum where it was determined by Mr. H. C. Oberholser. I know of no prior record for Michigan, as in Mr. Oberholser's paper, 'A Revision of the American Great Horned Owls' (Proc. U. S. Nat. Mus., XXVII, No. 1352), the eastern range of *occidentalis* is extended east to Minnesota. A critical examination of specimens of *Bubo* from the Upper Peninsula may bring other specimens to light.— B. H. Swales, *Grosse Isle, Mich.*

Turkey Vulture in Northern Steuben County, N. Y.— A female Turkey Vulture (*Cathartes aura septentrionalis*) was shot by a farmer in the town of Pulteney, Steuben Co., N. Y., July 11, 1909, and the skin is now in the possession of Richard Cowan, Bluff Point, N. Y. There were eleven of the vultures feeding on a dead hog in a gully.— Verdi Burtch, *Branchport, N. Y.*

The Last Passenger Pigeons in Wayne County, Michigan.— It is generally conceded that the Passenger Pigeon is now extinct in its wild state, and it has occurred to me that some additional data relative to the last local record may prove of interest. In the 'Bulletin of the Michigan Ornithological Club' (Vol. IV, September, 1903, p. 81) Dr. Philip E. Moody records the last pigeon taken here as follows: "A Wild or Passenger Pigeon (*Ectopistes migratorius*) was shot September 14th, 1898, at Chestnut Ridge, a few miles from Detroit, by Frank Clements, of this city. The bird — an immature specimen — was later mounted by Chas. Campion and is now in the collection of J. H. Fleming, of Toronto, Ont. This is probably the last authentic record of this species in Michigan."

I have since talked with Dr. Moody regarding this record and he says "Mr. Clements and I were in the thick woods when we noticed three pigeons. They were flying above the tree tops, two abreast and the third behind and lower down. The latter bird lit near the top of a tall tree but the others continued their flight without a pause. I could have shot it but thought it was a Mourning Dove. When Mr. Clements picked up the bird we knew at once what it was and looked for the other two but they could not be found."

Dr. Moody feels certain that all three were of the same species, in fact, the remaining two seemed larger. All points considered, it is possible that the birds were two adults accompanied by their young. They may have traveled far, which would account for the young bird falling behind and pausing to rest. The bird was not taken at Chestnut Ridge, though not far away. The exact locality is Private Claim 660, Dearborn Township, Wayne Co., Michigan.— J. Claire Wood, *Detroit, Mich.*

Carolina Parakeet (*Conurus carolinensis*).— For many years the range of this species has been extended to include Michigan on the strength of a specimen preserved in the U. S. National Museum. I have recently examined this bird, number 1228, and find that it was received by Prof. S. F. Baird from Dr. Leib of Philadelphia among a small collection of other birds. In the original catalogue of the National Museum this specimen is recorded as number 1228, in Prof. Baird's handwriting, but is given no locality. However, he later records it as "Southern States" in Pac. R. R. Surveys, IX, 1858, p. 68, together with its measurements, etc. As. Prof. Baird undoubtedly knew more then of the status of the birds received from Dr. Leib, this specimen must be eliminated from all consideration as a Michigan record. I believe that there is no other Michigan record for the species. In a letter from Prof. Walter B. Barrows, dated Feb. 25, 1910, he says: "I am quite sure that there is no other record of a Michigan specimen to which the slightest weight can be attached. There have been various suppositions as to the Parakeet's former occurrence in the State, but these are only conjectures."— B. H. Swales, *Grosse Isle, Mich.*

Acadian Flycatcher in Ontario.— On writing to my friend Dr. MacCallum of Penetanguishene, who lived for many years at Dunnville, regarding my capture of the Acadian Flycatcher in southwestern Ontario last June, he replied, that he had a nest and set of three eggs, which he had always believed belonged to this species. I had seen this nest years ago, but was not at that time aware of the marked difference between the nest of this species and that of the Alder Flycatcher. Since then I have added nests of both of these species to my collection and know how easy it is to distinguish between them. I therefore wrote Dr. MacCallum, asking for the privilege of inspecting this nest and set. The favor was promptly granted, and the nest is undoubtedly that of the Acadian Flycatcher as the Doctor surmised. "It was taken," he writes, "from an old thickly branched apple tree on June 24, 1884." The nest is composed of fine grasses and rootlets bound together on the outside by what appears to be caterpillar web.

The well known habit of this species of making the nest appear like an accidental bunch of drift, by the addition of loose flowers of alder, walnut or oak, is varied in this instance by the substitution of a large number of bud scales, apparently of beech. The nest is, as usual, shallow, the cavity measuring $\frac{7}{8}$ of an inch deep, by $1\frac{1}{2}$ inches wide, while the external measurements are 5×2. In every particular this nest corresponds so exactly with that of the Acadian Flycatcher, that there cannot be the least doubt of its belonging to that species, thereby antedating my discovery of the bird in Ontario by 25 years.

It is, of course, quite within the possibilities, that there are favorable locations for this bird scattered along the north shore of Lake Erie, in fact it would be surprising if there were not, and as the spread of southern species which barely reach the limits of Ontario appears to be strictly

limited to the vicinity of that lake, it seems altogether likely that this bird will be found, eventually, to be a somewhat rare, but quite regular inhabitant of the strip of land extending along the north shore of Lake Erie.— W. E. SAUNDERS, *London, Ont.*

Magpie in Knox County, Indiana.— A Magpie (*Pica pica hudsonia*) has been seen passing the winter a few miles north of Bicknell, Knox Co., Indiana. It has been observed by quite a number of persons who all tell me the bird was black with white shoulder patches, a white band on the wings, and white underparts; bill long and black, tail long and wedge-shaped, body slender. It kept around outbuildings, feed lots and slaughter pens and fed on offal. It was seen December 24, 1907, and also February 10, 1908. So far as I am aware, this is the first record for the species for this State.— E. J. CHANSLER, *Bicknell, Knox Co., Ind.*

A Correction: A New Bird for the United States.— In the July, 1909, 'Auk,' I reported the capture of a Red-eyed Cowbird (*Tangavius æneus involucratus*) near Tucson, Ariz. This specimen was later identified by the Biological Survey as *T. æneus æneus* of western Mexico, which thus makes a new record for the area covered by the A. O. U. Check-List.

Several Red-eyed Cowbirds spent the summer near Tucson, and at least four young were raised; two by Cañon Towhees and two by Arizona Hooded Orioles. Specimens were last observed September 21.

The capture of a male Red-eyed Cowbird May 28, at Sacoton, Arizona, (on the Gila River, 75 miles northwest of Tucson and 30 miles southeast of Phœnix) was reported by Mr. Breninger in the August 'Condor.' W. W. Cooke writes me that this specimen was compared with mine and was found to represent the same variety.— S. S. VISHER, *Universtiy of Chicago.*

A Migration of Longspurs over Chicago on December 13, 1909.— On December 13, 1909, a considerable migration of birds, probably some species of Longspur, occurred at Chicago between the hours, as far as I observed, of 5:30 P. M. and 10 P. M. As it was dark during this period the birds were not seen, but their calls were plainly heard as often as I went outside to listen for them. Their number indicated that large flocks of birds were passing overhead, and their changes of source suggested that they were traveling in a southerly direction. The calls resembled the common one-syllabled flight call of the Lapland Longspur (*Calcarius lapponicus*), but had more of a ringing quality.

My observations were made on and near the campus of the University of Chicago, which is about a mile west of Lake Michigan. The official weather map and report for this date show that Chicago was in the center of a "low," with winds coming from the west and northwest at a velocity of 23 to 26 miles an hour. A wet snow fell up to 8 o'clock P. M. and the temperature was a little below freezing.

Cold weather and snowfall in the north and northwest may have driven the birds down. It would be interesting to learn whether they were observed south of Chicago.— RALPH W. CHANEY, *Chicago, Ill.*

Winter Migration at Night.— A remarkable flight of birds, which I believe were Lapland Longspurs, occurred on the night of December 13, 1909. Thousands of birds passed southward during the snow-storm, their voices coming from above, as we hear them during the spring migrations. They were first heard about dark, and through the evening until ten o'clock, when I retired. They passed over steadily, their notes being heard from the sky from every direction. This is the first time I have ever heard of such an occurrence in winter.— HENRY K. COALE, *Highland Park, Ill.*

The Seaside Sparrow on Cape Cod, Massachusetts, in Winter.— On December 29, 1909, while duck shooting in the salt marshes at Barnstable, Mass., I secured two specimens of the Seaside Sparrow (*Ammodramus maritimus*). The birds were found in the tall thatch bordering a large creek about three hundred yards from Sandy Neck. They were the only birds of the species seen during four days spent in the marshes. One proved to be a male, the other a female.

Howe and Allen's 'Birds of Massachusetts' records the capture of one Seaside Sparrow in the Barnstable marshes on February 9, 1898, by Messrs. H. B. Bigelow and G. C. Shattuck, and of another, a male, on February 9, 1901, by Mr. Howe. No later records have come to my notice, so apparently mine is the third winter record of this species in Massachusetts and would suggest that the bird is perhaps not such an irregular straggler there in winter.— ALFRED C. REDFIELD, *Wayne, Pa.*

Further Notes on the Lark Sparrow in Southwestern Pennsylvania.— During the latter part of August, 1909, while driving along a road near Leetsdale, Pa., I saw four Lark Sparrows (*Chondestes grammacus*) at precisely the same spot at which I collected my first specimen in June, 1908.[1] I had no time to look for more of the birds, but they undoubtedly breed in this locality, and this spring I mean to investigate more thoroughly as regards this bird's presence in a region so far from his usual range.— WM. G. PITCAIRN, *Allegheny, Pa.*

A Chipping Sparrow in late December at Boston, Mass.— On December 21, 1909, close to the shore of Chestnut Hill Reservoir within the limits of the city I found a brightly plumaged Chipping Sparrow (*Spizella passerina*) picking busily and happily on the grass about some evergreens at midday. The temperature was at the frost point, but no snowfalls to remain had occurred up to that time. There had been several mornings of tempera-

[1] See Auk, Vol. XXV, 1908, p. 476.

tures as low as 16° to 20°, however. I would naturally have expected the sparrow to be a Tree Sparrow, but it was a veritable Chippy, with which I spent ten minutes. Mr. William Brewster, in his 'Birds of the Cambridge Region,' gives one December record, that of a bird seen by him at Watertown on December 31, 1869. The severe Christmas blizzard came four days later, depositing a foot and a half of snow, and this belated sparrow was not again seen. Mr. Brewster gives October 25 as the date of departure of the last Chippies; Dr. Townsend for Essex County, October 28. My records in the last three years extend the season somewhat later. They are: two Chipping Sparrows on the Common on October 30, 1907 and 1909; one on November 1, 1907, at Arlington, two on the 5th at Waverley, five on the 6th in Brookline, two on the 9th in Stoneham; one on October 29, 1908, at Chestnut Hill; a company of ten on November 5 and 7 of the same year at Stoneham; and one at the same locality in Stoneham on November 6, 1909.— HORACE W. WRIGHT, *Boston, Mass.*

Cerulean Warbler (*Dendroica cerulea*) **in Northern New Jersey.** — On Sept. 25, 1909, I collected an immature male of this species near my home at Palisades Park, N. J. The bird was found among the flocks of migrating warblers and undoubtedly was a migrant. This species appears to be rare in the Hudson Valley, and the specimen in question is the only one I have seen during my experiences in the field covering a period of seven years.— J. A. WEBER, *Palisades Park, N. J.*

A Wintering Brown Thrasher in Northern New Jersey.— Records of wintering Brown Thrashers in northern New Jersey are so few that my recent experience with one of this species seems worthy of note. Prof. Witmer Stone, in his 'Birds of New Jersey,' says that Mr. Chapman has two winter records for Englewood, January 31, 1885, and "on another occasion" (date not given). These are the only records I have ever seen for the northern part of the State. On January 23 of this year, while walking with a friend in the outskirts of this town, a large bird flew up from the ground some distance ahead of us and took shelter in a thicket of low bushes and green-briar. His general appearance and flight at once suggested to us thoughts of Brown Thrasher, but we had had but a momentary glimpse of him, and could hardly believe it possible, especially considering weather conditions, for there was a foot of snow on the ground and we had just experienced a week of severe weather, with some nights of zero temperature.

One of us went on either side of the line of bushes, the bird keeping just ahead of us and out of sight until it reached a large tree, around the roots of which there was a little bare ground where the snow had drifted off. Here our quarry came to the ground and at once became interested in something which was evidently to his liking, for when we came abreast of him, he was hammering it with his beak, after the manner of a jay. Here

we got a good look at him, one on either side, and each at a distance of about fifty feet, and he proved himself a Thrasher. The writer was provided with field glasses, and made a complete identification.

My companion was Mr. David M. Macnaughton of Chatham, N. J., who will corroborate these statements. I saw the bird again in the same locality on February 5, and he was then scratching busily in some dead leaves on a south slope which was clear of snow. I was within ten feet of him before he flew up into an apple tree nearby.

He seemed vigorous and contented, and as he has managed to find a living through two very heavy snows and some very cold weather, his chances for surviving the rest of the winter seem good — barring cats.— R. C. Caskey, *Morristown, N. J.*

A Carolina Wren in New London County, Connecticut.— While driving along a well traveled road on the afternoon of Dec. 29, 1909, I had the pleasure of meeting a Carolina Wren (*Thryothorus ludovicianus*) and visited with him several minutes as he was not in the least shy. The thermometer registered zero that morning, with a foot of snow on the ground.— Arthur W. Brockway, *Hadlyme, Conn.*

Wilson's Thrush (*Hylocichla fuscescens*) **a common Breeder Near Allegheny, Pennsylvania.**— During the spring of 1909, I found the Veery breeding quite commonly in suitable localities near Allegheny, Pennsylvania.— Wm. G. Pitcairn, *Allegheny, Pa.*

Concerning Three Erroneous Georgia Records.— In 'The Auk' for January, 1910, p. 88, Mr. Ridgway cites the late Maj. Bendire as authority for the breeding of *Molothrus ater* in Wayne and McIntosh counties. But the latter must have been misinformed, as if this species really breeds in those counties the breeding range would unquestionably extend northward along the coast to South Carolina, as the Cowbird breeds far north. It is true that I only spent a "part of a single month in each county"— in May, 1891 — *not* 1901 as Mr. Ridgway has stated. But a glance at the map of Georgia will reveal the fact that by crossing the Altamaha River from McIntosh County anyone can go into the counties of Wayne and Glynn in less than an hour.

Mr. Ridgway says that "the breeding of the Bank Swallow and Short-billed Marsh Wren on St. Simon's Island is based on eggs actually collected there and positively identified (both by Mr. Bailey and myself)." In his 'Manual of North American Birds,' 1887, p. 463, Mr. Ridgway gives the measurement of eggs for *Clivicola riparia* as .70 × .49, and of *Stelgidopteryx serripennis* as .72 × 51. If there is a person who can differentiate the eggs of these two species by comparison I would like to know where he can be found!

In re the Short-billed Marsh Wren, the eggs collected between the years 1853 and 1865 purporting to belong to this species, were really *albino* eggs

of *Telmatodytes palustris griseus* — a form which *often* lays *colorless* eggs, as I well know, having taken eggs as long ago as 1877 of the latter and which are now in the Charleston Museum. Mr. Ridgway gives the measurement of the eggs of *Cistothorus stellaris* as .63 × .48 and of *palustris* as .66 × .46. As *griseus* is smaller than *palustris* the eggs are naturally smaller. The colorless eggs of *T. p. griscus* taken by me in 1877 I believed were representatives of *Cistothorus stellaris* simply because they were *white* instead of *chocolate!* If the Short-billed Marsh Wren bred on St. Simon's Island between the years 1853 and 1865 (which is questionable) it would still continue to do so at the present time, as the conditions are unchanged.

While I am discussing these Georgia records it is well to mention that the eggs of Bachman's Warbler (*Vermivora bachmani*) were recorded [1] from Georgia by Mr. H. B. Bailey, taken by the late Dr. G. S. Wilson between the years 1853 and 1865. These eggs were described as "dull white; around the larger end is a wreath of dark brown, covering nearly one-third of the egg; while a few obscure spots of lilac are scattered over the rest of the surface." As is now well-known, the eggs of Bachman's Warbler are pure white without any markings of any color.— ARTHUR T. WAYNE, *Mount Pleasant, S. C.*

Birds of Central Alberta.— In 'The Auk' for October, 1909, appeared a list of birds by myself for this district, and in the January, 1910, issue appeared some comment on the list by Mr. W. E. Saunders of London, Ontario. May I be allowed the space to show where these so-called discrepancies are not discrepancies at all, as will be explained by the following.

Whooping Crane.— "A very common migrant, stopping at least part of the summer along the larger lakes. One nest was located which was afterwards abandoned." This statement *is correct.* I have seen no Sandhill Cranes here at all.

White-winged Crossbill.— My notes sent to the 'Ottawa Naturalist' for 1907 stating, "Seen but once," "a pair carrying nesting material in a spruce swamp," are those of 1908. This accounts for my stating it bred here. When a bird is seen carrying nesting material it is quite obvious that it nests in that locality. Where I stated in 'The Auk,' "seen but once" I should have said, "seen but twice."

Evening Grosbeak.— My 1906 list states: "Seen but once." My 1907 list, sent to the 'Naturalist,' says: "Seen but once." For 1908 the list states, "Found nest, four birds around most of time, quite common." My 1909 list states "Rare and breeding." As will be seen at a glance, these birds were "rare" during 1906, 1907, and 1909, and quite common during 1908; therefore the conclusion was drawn that the bird, on the whole, should be considered as "quite rare," as stated in 'The Auk.'

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[1] Bull. Nutt. Orn. Club, VIII, 1883, 38.

Nelson's Sparrow.— My 1907 list, sent to the 'Naturalist,' states that it is common, also that it breeds here. My 1908 list states "rare" and "seen but once"; also that it "breeds here." My 1909 list states, "common and breeding." Therefore, taking the observations as a whole, I considered the bird was "fairly common."

Lincoln's Sparrow.— I do not claim that my list is complete and I so state in my article in 'The Auk' for October, 1909, where I say: "My list would have been a great deal larger if I had been able to visit the districts lying to the west and south, but as time would not permit me to do this I will have to be content with the list here given and trust that new species may be added each year until the list is complete."

Philadelphia Vireo.— My 1908 list sent to the 'Naturalist' states, "Very rare"; also that it breeds here, which was correct for 1908. 'The Auk' list says, "Very common," which was correct for 1909. These birds being very numerous during the season of 1909 led me to conclude that they were *very common*, which is correct.

Brewer's Blackbird.— My 1908 list, in the 'Naturalist,' states: "Common at Edmonton — but rare here," which was absolutely correct. Travelling over a greater territory in 1909 I found these birds to outnumber the Rusty Blackbird, hence my statement in 'The Auk' to that effect.

Golden Eye.— My 1908 list, in the 'Naturalist,' stated this bird was "very rare"; also that it bred here. 'The Auk' list states this bird is "Quite common during the spring and fall and met with occasionally during the summer. A nest found near here with ten eggs." These birds being more numerous during 1909 than during 1908 led me to make the above statement.

During the years 1907, 1908, and 1909, I kept a very careful record of the birds of this locality on forms supplied me by the Biological Survey of the U. S. Department of Agriculture. As my 1907 list was made up it was complete in itself, and for 1907 only. When my 1908 list was made up it was also complete in *itself*, and for 1908 only. When my 1909 list was made up *it* was complete in *itself*, and for 1909 only.

The list of birds appearing in the 'Ottawa Naturalist' for October, 1909, was made up by the editor of that journal from the duplicate copies which I made for the U. S. Biological Survey and were for the years 1907 and 1908 only, without any annotations aside from those noted in the reports.

The list sent to 'The Auk' was taken from my 1906 observations and from the duplicate copies which I made for the U. S. Biological Survey for the years 1907, 1908 and 1909, with annotations. Therefore it is very easy to see why the two lists slightly differ.

If this list does not harmonize with Mr. Saunders's or other lists taken in this locality I cannot help it, but I would have him understand fully that because it does not agree with other lists is no sign whatever that it is not correct.

I hope this will fully explain the so called discrepancies and corrections pointed out by Mr. Saunders.— SIDNEY S. S. STANSELL, *Edmonton, Alberta.*

Breeding Records from Southern Illinois.— In connection with Biological Survey field work during the season of 1909 I visited a number of localities in southern Illinois and among the bird notes gathered on this trip the following seem to be worthy of record.

Rallus elegans. KING RAIL.— At Shawneetown, June 18, a King Rail was seen a number of times around a small marshy pond in the river bottoms. It was quite tame and ran about near me, uttering a loud *keck-keck*. After walking about in the grass awhile I started two young ones, which doubtless explains the tameness of the parent.

Buteo lineatus. RED-SHOULDERED HAWK.— Several pairs breed in the swamps at Olive Branch. A female collected there on May 18 is referable to the typical subspecies.

Strix varia. BARRED OWL.— An adult female was collected at Olive Branch, May 18.

Dryobates villosus auduboni. SOUTHERN HAIRY WOODPECKER.— Fairly common in the swamps at Olive Branch where a specimen was collected May 17. This form has not previously been recorded from Illinois.

Sturnella magna argutula. SOUTHERN MEADOWLARK.— This subspecies is common throughout southern Illinois; a specimen was taken at Olive Branch.

Chondestes grammacus. LARK SPARROW.— This bird is of very local distribution in southern Illinois; it was seen only between Cobden and Lick Creek, where several pairs were noted May 22.

Lanius ludovicianus migrans. MIGRANT SHRIKE.— Shrikes are quite scarce in the extreme southern part of the State, but are rather common on the prairies about Coulterville. A specimen taken there and one at Odin are referable to *migrans*. One was seen at Olive Branch and two at McClure.

Helinaia swainsoni. SWAINSON'S WARBLER.— This bird was observed several times at Olive Branch (May 15–20) and at Reevesville (June 21, 22) but unfortunately no specimens were secured. The birds were identified first by their songs and later by the aid of a field glass.— ARTHUR H. HOWELL, *Washington, D. C.*

Notes from Eastern Ohio.— On February 6, 1905, when the temperature was unpleasantly close to the zero mark, a Holbœll's Grebe was brought to me by several boys to identify. They had picked it up in an alley in an exhausted condition. The boys took it up to the Court House tower and pitched it out into space, expecting to see it take wing and fly away, but the poor bird fell upon the roof of the building and, rolling off, struck the ground and was killed by the fall.

On May 11, 1909, while taking a few minutes in the evening to look for warblers in my favorite woods, I encountered my first Prothonotary Warbler. It flew directly at me, avoiding my face by a few inches, and lit almost at my feet. For fully twenty minutes I had the pleasure of studying it at close range.

A farmer living near here has trapped and shot 40 hawks, nearly all being Red-tails, on his farm within the past year. Another farmer living in this county has destroyed nearly as many recently. I have noticed a diminution in their numbers this winter.

On March, 1907, a Whistling Swan was shot by Frank McCombs, near Cadiz, and on the 22d of the same month another was shot by W. E. Mong, near Scio, this county.

In a conversation once with Dr. Beal, of Scio College, the author of the Beal local option law, he told me of talking with a guide in northern Michigan who claims once to have counted thousands of "Wild" Pigeons lying dead upon the shore of the lake. A great storm had swept over the lake a few days before, and the guide stated to the Doctor, who was spending his vacation in that region at the time, that the shore of the lake was literally covered with the bodies of the dead birds for a great distance.

Delbert Burdett, a farmer living near Cadiz, who has pointed out to me the nesting places of the Redstart, Pileated Woodpecker, and other rather rare birds, claim to have seen a great flock of Passenger Pigeons in September, 1898. He was at work cutting timber near St. Clairsville, Belmont County, Ohio, sixteen miles from Cadiz, when a flock of "thousands" of Pigeons suddenly appeared, and in alighting, covered a field several acres in extent. A number of old farmers saw the birds, and all agreed they were "Wild" Pigeons. I questioned Mr. Burdett very closely regarding the occurrence, and have every reason for believing his story is correct.

Mr. and Mrs. E. C. Gerke, of Rayland, Jefferson County, Ohio, captured a Snowy Owl in their barn on May 9, 1909. This is a decidedly late date for this owl to be found in eastern Ohio.— HARRY B. MCCONNELL, *Cadiz, Ohio.*

New Records for the State of Washington.— I wish to report the following records for the State of Washington:

Dendragapus obscurus richardsoni. RICHARDSON'S GROUSE.— This bird is reported by S. E. Piper of the Biological Survey as being not uncommon in the lateral cañons of Snake River during the breeding season. So far as known they leave this locality before the first of October. Mr. Piper has hunted these birds and has made "some good bags." Unfortunately I have been unable to locate his specimens.

Ammodramus savannarum bimaculatus. WESTERN GRASSHOPPER SPARROW.— Two adult males in breeding plumage were taken in a wheat field in the Touchet Valley near Prescott, Walla Walla Co., on June 16, 1908. These specimens are in my possession.

Junco montanus. MOUNTAIN JUNCO.— A female of this species was taken by R. E. Snodgrass at Pullman, Whitman Co., October 11, 1902. This specimen is in the Washington State College Museum. The species was determined by H. C. Oberholser.

Certhia familiaris montana. ROCKY MOUNTAIN CREEPER.— A specimen taken at Prescott, Walla Walla Co., Dec. 26, 1908, was determined by W. H.

Osgood of the Field Natural History Museum to be of this subspecies. This specimen is in my collection.

Penthestes atricapillus septentrionalis. LONG-TAILED CHICKADEE.— Two specimens from Pullman and one from Prescott of my collecting were determined by H. C. Oberholser to be of this variety. On comparing them with the collection of the Field Natural History Museum, Chicago, these specimens appear to be intermediate between *atricapillus* and *septentrionalis*. All the chickadees from these localities seem to be of this character.

All of these birds except the Junco were placed in the hypothetical lists by Dawson and Bolles (Birds of Washington, 1909).— LEE R. DICE, *Prescott, Wash.*

Some Rare Occurrences in Yates County, N. Y.— Brünnich's Murre (*Uria lomvia*).— A female Brünnich's Murre was killed in the inlet of Keuka Lake at Branchport Dec. 1, 1902, by Myron Pelton and the skin is now in my collection. It was apparently unable to rise from the water and was killed with a boat oar. There was not a particle of fat on the body and the stomach and intestines were entirely empty.

Orchard Oriole (*Icterus spurius*).— While at a farm house in the country near Branchport, May 6, 1903, I heard a bird note that was new to me and, following it up, I soon saw an Orchard Oriole in a cherry tree in the yard. As it stayed around for some time I had a good chance to study it and I am absolutely sure that I identified it correctly. I know of but one other record of this bird in Yates County. James Flahive has a mounted female in his collection that he shot in his yard in Penn Yan in 187–.

Hudsonian Godwit. (*Limosa hæmastica*).— A Hudsonian Godwit was shot on the mud flats at Branchport, Oct. 29, 1905, by a hunter who brought it to me to be identified and the skin is now in my collection.— VERDI BURTCH, *Branchport, N. Y.*

Notes from Boulder County, Colorado.— Varied Thrush.— A bird of this species was seen on December 5, 1909, in Gregory Cañon near Boulder. The weather for the preceding week had been cold and snowy. The bird was not taken but was observed with a field-glass under conditions permitting a full description. After feeling certain of the identification myself, I sent the description to Professor Cooke, who accepted it as satisfactory evidence for a State record.

Cañon Wren.— During the winter of 1909–10, a resident, rather inconspicuous but not rare. One was taken on November 25, 1909, and three others seen the same day. I have seen or heard them, usually a single bird at a time, in Boulder, Gregory, and Bear cañons at frequent intervals from October 30 till the middle of February (when these notes were written).

Barn Owl.— A single bird was seen on October 31, 1909, about six miles east of Boulder. It was about twenty feet down in a deserted shaft, perched on a ledge. It was still in the same place a week later, but in attempting to drive it out of the hole, the bird sailed further down and was not seen again.

Virginia Rail.— On December 24, 1909, a single bird was observed in the narrow open channel of a small stream near a cat-tail marsh. I watched it closely with a field-glass for some time before it disappeared under a thin sheet of ice that had been left above the water-level. It did not act injured though I did not see it fly.

Golden-crowned Kinglet.— One was taken on February 6, 1910, from a flock of about eight. They were feeding in the pines on a mesa near Boulder.— N. deW. Betts, *Boulder, Colorado.*

Massachusetts Notes.— Blue-winged Teal (*Querquedula discors*).— Because this bird is considered a rare spring migrant near the coast of this State I would like to record having seen a pair on April 11, 1909, in a pond near Wenham Swamp, Topsfield, Mass. The male was in full adult plumage, the white crescent before the eye plainly visible. I observed them for some time with a pair of glasses and as they were not over a hundred yards distant there could be no question as to their identity.

Red Phalarope (*Phalaropus fulcarius*).— On May 2, 1909, I shot a male specimen on the Guerned beach, Duxbury, Mass. The bird even at that date was in the extreme immature or winter plumage with no trace of red. However a few feathers on the back were slightly tipped with tawny. For one or two days previous there had been a rather heavy easterly storm and I suppose it had been driven ashore at that time. At any rate the bird was not tired but strong on the wing, and furthermore was in good condition. It is now in my collection. Though these birds can hardly be called rare on our coast, they are more apt to be taken in the late summer or early fall rather than in the spring.

Barn Swallow (*Hirundo erythrogaster*).— On August 16, 1909, an albino male specimen was shot by Russell Bearse at Chatham, Mass. The bird was taken on the flats off Monomoy Island where Mr. Bearse had gone after shore birds, and where it had been seen previously for several days. It was nearly pure white and the only suggestion of any other color was on the inner webs of the middle tail feathers where the white spots ordinarily exist in the normal plumage. These white spots on close scrutiny could still be seen, showing that the rest of the plumage was not pure white. This specimen is in the collection of the Boston Society of Natural History.

Buff-breasted Sandpiper (*Tryngites subruficollis*).— On September 4, 1909, I shot a female specimen on Monomoy Island, Chatham, Mass. There was an easterly storm the day previous making it very improbable that the bird had just arrived. For that reason, and because of the fact that the bird was fat and in excellent condition, it seems likely that it had been there several days. I was walking through the meadows where the salt grass had been cut looking for Pectoral Sandpipers when this bird flew up. As I was on the lookout for anything odd that day I immediately recognized it as it rose. It is now in my collection. On enquiring of a few people in Chatham, Mr. Russell Bearse, a reliable local gunner, informed me that nearly every year during the flight of Pectoral Sandpipers in Sep-

tember he had killed one of these birds on these same meadows. He is on the grounds regularly several days a week and is the best informed person in the neighborhood. This only goes to show that there are undoubtedly more of these birds killed than is known about.

King Rail (*Rallus elegans*).— I received a fine adult male this fall from Chatham, Mass., where it was shot on October 31, 1909, by Mr. Russell Bearse. The King Rail seems to be a rather uncommon straggler from the South and there are but few recent records of its having been taken here. Mr. F. H. Kennard records in 'The Auk,' Vol. XXV, p. 218, a male being taken at Needham, October 10, 1907, and in the collection of the Boston Society of Natural History is a bird taken in a steel trap at Peabody, Mass., March 13, 1908. The specimen to which I refer taken at Chatham is also in the above collection. Mr. Bearse also informed me that on December 28, 1908, he killed another King Rail at Chatham which was given to Mr. Warren E. Freeman of Arlington, Mass. This latter seems like a very late date.

Chewink (*Pipilo erythrophthalmus*).— This seems to be a rare winter resident and I can find no record for this State since 1904 when, on December 4, at Smith's Point, Manchester, a bird was seen by W. R. Peabody. On December 28, 29 and 30, 1909, I saw a handsome male bird at Edgartown (Martha's Vineyard), about two miles from the town. I was duck shooting and staying at our camp on the "Great Pond," and observed this bird both from the building and from the stand. The end of the point where the camp is situated is covered with a thick growth of bushes and the Chewink seemed to be living in them. He was so tame that he scratched among the leaves almost at my feet, and even when I moved he did not appear to be greatly frightened. He also came close to the door in search of the food we threw out after meals. A family of rats were living under the building and several times I saw one of them searching among the leaves for this food, with the Chewink only a very few feet away engaged in the same occupation. The day I left the bird was still there and appeared to be in good condition. As far as I could see his only other feathered companions were a pair of Song Sparrows that spent their time in the same way scratching among the leaves in search of food. During these three days the weather was bitterly cold, the thermometer going to nearly zero every night, and considering the continued cold weather we had experienced since the first of December, and the blizzard the day after Christmas, the bird seemed to have chosen an extremely cold winter to stay north. Though I never heard him chirp, he showed no signs of minding the cold, for when feeding he was very active on his feet. I never saw him fly or attempt to, but in such thick cover there was no occasion for it. Still, he may have had a bad wing which would account for his being north. It seems reasonable to believe that physical disability must play an important part in such cases as these.— S. Prescott Fay, *Boston, Mass.*

Bird Notes from Springfield, Mass., and Vicinity.— Gallinule galeata. On January 17, 1910, William Dearden, a taxidermist, residing in Springfield, received a Florida Gallinule, to be mounted, which was sent to him from the town of Ware. The occurrence of this bird in Massachusetts at this season of the year, was so unprecedented, that deputy game warden, Dennis F. Shea, residing in Ware, was asked to inquire into the matter, which he did, and reported that this bird was first seen about the middle of December in a field on the farm of Arthur F. Bennett, in the town of Palmer, feeding on an old pig's head that lay upon the ground; that for a number of days after that time, Mr. Bennett saw the bird near his hen-coop, searching for food. Finally he caught it and put it in with his fowls, where in a few days it died. Mr. Bennett states that he thought his hens killed it.

Sialia sialis. Early in the past winter four Bluebirds were observed in the town of Westfield, and they have since been seen in the same locality in this town many times during the months of January and February. The region adopted by these birds as their winter home was near a trolly line and the passengers in the cars were often entertained by seeing these unusual winter visitors. This is the first authenticated instance of Bluebirds wintering in the Connecticut Valley as far north as Springfield.

Mimus polyglottos. About the 20th of last November, a Mockingbird appeared in the residential part of Springfield, where the homes are surrounded by ample grounds, and in that vicinity made its home during the past winter. Very soon after it was first observed, food was furnished it and it became quite tame. So-called mockingbird food, rice, bread crumbs, and suet, were provided for it, which latter it seemed to prefer. During severe storms this bird would disappear for a day or two, but with the return of pleasant weather would again be seen. The suggestion that it was an escaped cage bird has not the force it would have had a few years ago, as in Massachusetts, we now have a generally respected law forbidding the sale or confinement of these birds. Mockingbirds have been frequently seen in the vicinity of Springfield during the warmer months, and have rarely bred here, but never before has one been known to pass the winter in this part of the Connecticut Valley.

In 'The Auk' for last October, Francis H. Allen stated that a pair of Mockingbirds successfully raised a brood of four young in the eastern part of Massachusetts, and this bird may be one of that family.— Robert O. Morris, *Springfield, Mass.*

Another Tagged Bird heard from.— Mr. J. T. Miner of Kingsville, Ont., has a number of wild ducks in semi-domestication along with geese and pheasants. Each year he has interesting experiences with wild birds, which are attracted by the presence of their kind.

Last fall his Black Ducks attracted a wild one of the same species on August 5, and within a few weeks the bird became so tame, that it could be handled. Mr. Miner then put a ring around its leg, and left it at liberty

as before. About Dec. 15, it left, and the following letter from Mr. W. E. Bray, Anderson, South Carolina, gives subsequent history.

Anderson, S. C.

On Friday evening, Jan. 14, I was hunting on Rockey River near this city, and killed a wild duck, with a band on his leg marked Box 48 Kingsville, Ont.

I supposed who ever sent him out wanted to hear from him, so I am writing to let you know where he came to his end. He was a very fine specimen. I must commend him for his judgment, for he came to the best county in the best state in America.

If you will let me hear from you, I will return the band I took from his leg. So hoping you will send me his pedigree, I will close until I hear from you. Send me your address in full. W. E. Bray.

Mr. Miner writes that Mr. Bray has since sent him the identical ring which was on the Duck's leg.

Kingsville lies on the north shore of Lake Erie, about twenty-five miles from the east end of the lake.— W. E. Saunders, *London, Ontario.*

RECENT LITERATURE.

Thayer on Concealing Coloration in Animals.[1]— It is now fourteen years since the eminent artist, Abbott H. Thayer, first published his discovery of "The law which underlies Protective Coloration," in 'The Auk' for April and July, 1896. These articles were later republished, in full or in abstract, in the 'Yearbook' of the Smithsonian Institution for 1898, and in 'Nature' in 1902. Mr. Thayer has also given many practical demonstrations of his discovery before various gatherings of naturalists, his first oral presentation of the subject, with experiments and demonstrations, so far as we are aware, having been made before the American Ornithologists' Union at the annual meeting held in Cambridge, in November, 1896, and again more elaborately before the same body in New York, in November, 1897. Later similar demonstrations were given in England and in various cities in Europe. His previous most elaborate exposition of the subject in print appeared in the 'Popular Science Monthly ' for December,

[1] Concealing-Coloration | in the | Animal Kingdom | An Exposition of the Laws of Disguise | through Color and Pattern: | Being a Summary of | Abbott H. Thayer's | Discoveries | By | Gerald H. Thayer | With an Introductory Essay by | A. H. Thayer| Illustrated by | Abbott H. Thayer Gerald H. Thayer | Richard S. Meryman and others | and with Photographs | New York | The Macmillan Co. | 1909 [= February, 1910] — 4to, pp. xix + 260, 16 colored plates, and 140 black-and-white figures.

1909,[1] under the title 'An Arraignment of the Theories of Mimicry and Warning Colors.' Thus the general principles and outlines of Mr. Thayer's discoveries have become more or less well known to a large number of naturalists, and their important bearing on previous theories of protective coloration has been widely recognized. For nearly twenty years he has persistently continued his studies and experiments, visiting tropical countries for the express purpose of widening his opportunities for research, and in the present volume we have his mature results. The main text has been prepared by his son, who has worked with him in his investigations, evidently under the close supervision of Mr. Thayer, who has contributed an introductory essay on the general subject, and supplementary matter in the form of footnotes and addenda to the main text. Mr. Thayer's important discoveries in the field of animal coloration are here for the first time elaborately set forth and profusely illustrated.

In the preface it is stated: "The present book has been constructed for two main purposes: First, to lay before the comparatively few naturalists and others who have appreciated the original articles on the subject, the results of my father's further researches, with examples of the working of the newly revealed laws in many branches of the animal kingdom; and second, to present the matter, both in its simplest terms and variously elaborated, to a wider circle of readers. We hope thus to clear the way to a more general understanding and more intelligent study of the relations between animals' costumes and their environments."

The 'Introduction' (pp. 3–12) is an essay by Abbott H. Thayer, on the "psychological and other basic principles" of the subject, in which it is claimed that while protective coloration in animals is naturally considered as belonging to the province of the zoölogist, "it properly belongs to the realm of *pictorial art*, and can be interpreted only by painters. For it deals wholly in optical illusion, and this is the very gist of a painter's life. He is born with a sense of it;. . . .and his pictures live by it." The revelation of principles and facts relating to the subject which have escaped the penetration of the naturalist prove that this claim is not an empty boast.

No adequate synopsis of Mr. Thayer's work can be given within the limits available in the present connection, but a summary of the twenty-seven chapter headings, with a minimum of comment, will give some intimation of its scope and methods. Thus, in Chapter I, "the law which underlies Protective Coloration" is introduced and analyzed. This law is thus stated: "Animals are painted by Nature darkest on those parts which tend to be most lighted by the sky's light, and *vice versa*." It is shown that "light-and-shade is more important than color, because it is an attribute of form, while color is only secondarily so." Chapter II includes definition of terms and illustrations of "obliterative coloration" (figs. 1–13). Protective or disguising coloration tends to render animals invisible in their normal haunts, while 'mimicry,' as the term is here used,

[1] Vol. LXXV, pp. 555–570, with 2 half-tone plates and 12 text figures.

tends to deceptive visibility. On sandy deserts birds, mammals, and reptiles are counter-shaded from sand-color to white, and on dark-colored ground, from very dark to white.

Chapters III–IX deal especially with obliterative coloration, or the use of markings ("picture-patterns") on counter-shaded birds, illustrated mostly by photographs from life of Woodcock, Snipe, Ruffed Grouse, Whip-poor-wills, Nighthawks, Ptarmigan, Sage Grouse, Meadowlarks, Eider Ducks, Short-eared Owls, Plovers, etc. (figs. 14–52). These chapters are designed to show the perfect obliterative coloration of terrestrial birds that live among weeds and grass, fallen leaves and sticks, patches of mud, and pools of water — the perfect merging of their forms and markings with the background. The two next succeeding chapters (X and XI) treat of the markings of rails, bitterns, and other swamp birds, of obliteratively shaded ducks, and the uses served by spots and patterns in bird costumes (figs. 53–55).

In Chapter XII the birds of the ocean are taken up. Chapter XIII discusses the "inherent obliterative power of markings," which tend to obliterate or cancel, "by their separate and conflicting pattern, the visibility of the details and boundaries of form," and is illustrated by diagrams, both colored and in black-and-white, and photographs of birds from life (figs. 56–63). The same general subject is continued in Chapter XIV, in which are considered the special functions of markings, and the protective coloration of nestlings, illustrated with numerous figures of birds from life (figs. 64–82). Chapters XV–XIX deal with other features of coloration in birds, as the bright colors of bills and feet, the brilliant hues and iridescent patches of color so charactersitic of hummingbirds and other tropical birds, etc., in connection with their surroundings (pl. vi and fig. 83).

Chapters XX–XXII deal with mammals, which are treated along much the same lines as the birds, the consideration of which occupies the nineteen preceding chapters. Fishes are considered in Chapter XXIII, reptiles and amphibians in Chapter XXIV, and caterpillars, butterflies and moths, and a variety of other insects in Chapters XXV–XXVII, followed by supplementary matter in two appendices.

The text is devoted to a definition of principles and the presentation and illustration of facts; hypothetical conclusions from the facts are left to the reader. Optical illusions are disclosed and explained, some of the most important parts of the text being the explanatory legends accompanying the figures and colored plates. It is not to be overlooked that the work is by an artist, a vision-expert, who is qualified to contribute experience and expert knowledge in the field of optical effects. A striking feature in a book of this character is the absence of argument.

Mr. Thayer's position in the matter of animal coloration is directly the opposite of that of most naturalists, who assume that patterns of color or markings *reveal* the wearer, while Mr. Thayer convincingly shows that in reality they *conceal* when the animal, in its normal surroundings, is seen

from the viewpoints of its enemies, or its prey, as the case may be. (See especially fig. 103 with its explanatory legend.) He also discriminates between the way an animal looks to man and the way it must look to its fellow creatures — *i. e.*, whether the viewpoint is from above or from below, etc., or from the point most vital to the animal. This is perhaps more fully brought out in his recent paper in the 'Popular Science Monthly,' already cited, in which he endeavors to demonstrate that striking and diversified colors tend to concealment, if not at all times, that this is the net result of these supposed conspicuous costumes. The optical hypotheses on which have been based the theories of 'warning-colors,' 'recognition marks,' and mimicry he believes "would never have lived a day had their originators begun by testing them." His contention is that animals are colored to match their backgrounds. "Scarlet and yellow fruit colors, sky-blue and green leaf colors, on the Macaw, are as absolutely the picture of this bird's background while he is dangerously absorbed in feeding in a tropical fruit tree, as is the little terrestrial mammal's brown the picture of the universal earth-brown on which he lives." Nowhere, however, does the author say that the costumes of animals are *for* concealment nor does he attempt to show how or why they came to be as they are. It is, however, said (in a footnote to p. 36): "We ourselves attribute all such to natural selection, pure and simple and omnipotent."

Here and there the explanations and illustrations will doubtless appear to some of Mr. Thayer's readers a little strained and overdone, but they cannot fail to recognize that he has in the main kept well within reasonable bounds, and that he has discovered a key to much that was before contradictory and irreconcilable, and that, as a whole, his work is by far the most important contribution yet made to the subject of animal coloration. — J. A. A.

Howard's 'The British Warblers,' Part IV.[1] — The good things said of Parts I–III of this excellent work are equally applicable to Part IV, which consists mainly of two monographs, respectively of the Whitethroat and Lesser Whitethroat, the former occupying 23 pages of text and the latter 20 pages, each with a colored plate and several photogravures. In addition a colored plate and two pages of text are devoted, respectively, to the Greenish Willow Warbler and the Siberian Chiff-chaff; there is also an excellent colored plate of eggs, illustrating the eggs of eight species of British Warblers, figuring 44 eggs, series of six to eight specimens being given in several instances to show the range of variation.

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[1] The British Warblers: A History with Problems of their Lives. By H. Eliot Howard, F. Z. S., M. B. O. U. Illustrated by Henrik Grönvold. London: R. H. Porter, 7 Princes Street, Cavendish Square, W. Part 4, December, 1901. Price 21 s. net.

Contents:— Whitethroat, pp. 1–23, 1 colored plate, 4 photogravure plates; Lesser Whitethroat, pp. 1–20, 1 colored plate, 2 photogravure plates; Greenish Willow Warbler, pp. 2, 1 colored plate; Siberian Chiff-chaff, pp. 2, 1 colored plate; Eggs of British Warblers, 1 colored plate; temporary titlepage and contents for Parts 1–4.

The account of the Whitethroat is minutely biographical, but in that of the Lesser Whitethroat discussions are introduced relative to the nature of the excitement manifested by various kinds of birds, which when with young birds are suddenly approached, and of the cause of the local variations in the songs of birds of the same species, of which he details many examples. He inclines to the opinion that climate may have an influence upon the character of song. He says, in concluding this discussion: "Climate could never have been a cause of song, but by some such means [as previously explained] it may have determined the lines along which any particular development has taken place." — J. A. A.

Reed and Wright on the Birds of Cayuga Lake Basin, New York.— In a paper of 80 pages, Messrs. Hugh D. Reed and Albert H. Wright, of Cornell University, give an annotated list of 'The Vertebrates of the Cayuga Lake Basin, New York,[1] with much preliminary matter relating to the topography and meteorology of the region, illustrated with contour and other maps.

The area of the Cayuga Lake Basin is given as "about 1,600 square miles," its meridional length as about 65 miles, with a breadth varying from about 12 to 36 miles. The "basin is, in the main, typically Transitional, although in certain localities there is a trace of the Upper Austral and Canadian." The paper is based mainly on the records of the Zoölogical Department of Cornell University since its opening in 1868 and the personal observations of the authors, which cover the last twelve years; and acknowledgments of assistance are made to various members of the university and others.

The paper consists of an 'Introduction' of twenty pages, followed by the 'Catalogue of Species,' which are numbered consecutively from fishes to mammals, the fishes numbering 65 species, the amphibians 17, the reptiles 20, the birds 257, and the mammals 40. Under 'Life Zones,' in the introduction (pp. 376–379), is a brief analysis of the bird fauna with reference to the zones to which the breeding species properly belong, and later (pp. 386–390) the species are tabulated according to their manner of occurrence, as (1) permanent residents, (2) transient visitants, (3) summer residents, (4) winter residents, (5) of rare occurrence, and (6) accidental visitants. The 'catalogue of the species' occupies pp. 409–453, the annotations comprising a quite full statement as to their manner of occurrence, including migration and breeding dates, and the citation in footnotes of the records of capture of the rarer species. The work is evidently based on careful and extensive research and forms a valuable record of present, and

[1] The Vertebrates of the Cayuga Lake Basin, N. Y. By Hugh D. Reed and Albert W. Wright. Proc. American Philosophical Society, Vol. XLVIII, No. 193, 1909 (1910), pp. 370–459, pll. xvii–xx (maps). From the Department of Neurology and Vertebrate Zoölogy, Cornell University. (Although the cover date is 1909, the dates of printing on the signatures are Jan. 6–8, 1910.)

to some extent of earlier, ornithological conditions of this limited and somewhat peculiar area. We note a singular slip in the name of the Pied-billed Grebe which is given (in two places) as *Tachybaptus podiceps* instead of *Podilymbus podiceps*; also *Stryx* for *Strix* (p. 427); *articus* for *arcticus* (p. 429); and in respect to diphthongs one is puzzled to know whether it was the intention to separate or combine the vowels *ae* and *oe*, since they occur about as often *æ* and *œ* as *ae* and *oe*, both forms sometimes occurring on the same or adjoining pages; and the same irregularity of usage with *ae* and *aë*. But these are minor faults in an otherwise very carefully printed paper, and one of permanent value as a contribution to faunal literature.— J. A. A.

Beebe on the 'Ecology of the Hoatzin.'— In a recent paper of 22 pages, illustrated with several half-tone plates, Mr. C. William Beebe treats of the history and habits of the Hoatzin,[1] based on his studies of the bird in its haunts in Venezuela and British Guiana. On neither occasion were young birds to be found, so that the notes on the species refer solely to the adults, which were met with in life on the Guarapiche River in northern Venezuela in March, 1908, and on the Abary River in April, 1909. The introduction contains observations on the structure of its well-developed crop, and on the relationships of this "extremely ancient and isolated type." Then follow sections devoted to the history of its discovery, its nomenclature, geographical distribution, its 'general appearance,' its parasites, habits, food, nest and eggs, the author's field notes at the two localities above mentioned, and an account of his photographic studies, the results of which are reproduced in the accompanying half-tone plates, showing its haunts, attitudes in trees, and its nests. Mr. Beebe found the Hoatzin beginning to nest in British Guiana in April, but the nesting season evidently varies, since others have found it nesting here from December to July, and on the Orinoco in September.

The Hoatzins, says Mr. Beebe, "appear to be extremely sedentary, and day after day we could be sure of finding the birds in the same place. We located nine flocks, ranging from a single pair to forty-two in number, and these seemed never to move from their favorite trees except when driven back a few yards into the jungle by our intruding canoe." One of the photographs here published shows a flock of eleven birds. It is unnecessary to say that Mr. Beebe's paper is an important contribution to the history of an exceedingly interesting and hitherto little known bird.— J. A. A.

Beebe on Birds of Northeastern Venezuela.[2]— Mr. Beebe, accompanied by Mrs. Beebe, spent about three weeks, during March and April, 1908,

[1] A Contribution to the Ecology of the Adult Hoatzin. By C. William Beebe, Curator of Birds, New York Zoölogical Society. Zoologica, Scientific Contributions of the New York Zoological Society, Vol. I, No. 2, pp. 45–66, fig. 1–20. Dec. 28, 1909.

[2] An Ornithological Reconnaissance of Northeastern Venezuela. By C. William Beebe. Zoologica, Vol. I, No. 3, pp. 67–114, fig. 21–37. Dec. 28, 1909.

near the celebrated pitch lake at La Brea, in northeastern Venezuela. The twenty days' observations there made are the basis of the present paper, which gives a short account of the general character of the region, followed by an annotated list of about 140 species of birds, of which 22 were breeding. The notes on the habits of many of the species are quite extended, occupying from half a page to several pages, as in the case of the Yellow-backed Cassique. The paper closes with 'Part V. Ecological Conclusions,' in which is made a comparison of the bird life of Venezuela with that of the State of New York, with a full-page chart illustrative of "Arboreal Adaptive Radiation."— J. A. A.

Report on the Immigration of Summer Residents in England and Wales in the Spring of 1908.— The fourth Report of the Committee of the British Ornithologists' Club on the spring migration of birds into England and Wales during 1908 forms, as usual, a special volume of the 'Bulletin' of the Club.[1] This report is similar in character to those of previous years, giving first an account of the weather for each day of the period covered by the immigration (March 14–May 31), noting as well the daily arrivals of birds, followed by details of the chief movements observed at the lights during the same period, with maps for each of the thirty-three species scheduled. There are also notes on migratory movements during the autumn of 1907, and records from the lighthouses and lightships for the same period. As heretofore, generalizations relating to the general subject are held in reserve and will not be attempted till the observations have been continued for a much longer period.— J. A. A.

L. H. Miller on California Fossil Birds.— Recent exploration of the Quaternary asphalt Rancho La Brea beds in southern California has resulted in the discovery of abundant remains of birds as well as mammals, part of which represent forms now living in California, while part belong to extinct types only remotely allied to any known living forms. These asphalt beds have for ages proved a trap for the unwary bird or mammal that chanced to visit them. The oil from the oil strata that is forced to the surface accumulates in the natural depressions of the surface as small lakelets, which through evaporation become "masses of a plastic and marvelously tenacious and tar-like substance." Mr. Miller describes[2] these tar-pools as possessing "the mirror-like surface of water and, especially at night, might be mistaken for such; yet the bird whose wing-tip touches the innocent looking surface, or whose foot plashes into its margin,

[1] Report on the Immigration of Summer Residents in the Spring of 1908: also Notes on the Migratory Movements and Records received from Lighthouses and Light-vessels during the Autumn of 1907. By the Committee appointed by the British Ornithologist's Club.= Bulletin of the British Ornithologists' Club, Vol. XXIV, November, 1909. Pp. 235, with 29 maps.

[2] Fossil Birds of the Quaternary of Southern California. By Loye Holmes Miller. The Condor, Vol. XII, Jan., 1910, pp. 12–15.

is as surely doomed as though caught in the jaws of a more active enemy. In rainy season the depression becomes further filled with the addition of a super-stratum of water which may cover the tar surface to a depth of several inches, remaining fairly pure water for some time before it becomes polluted by the rise of the lighter constituents of the oil layer. Animals, small and large, wade rashly into the treacherous trap thus baited with that rare luxury of the region, water. The struggling victim becomes again bait for the predatory forms, and all in turn tempt the carrion feeder. To-day, as in ages past, the trap is at work. Barn Owls, Great Blue Herons, Meadowlarks and other birds have been noticed in the surface pools, still in the flesh" (*l. c.*, p. 13).

This treacherous region is situated ten miles west of Los Angeles, California, on the old Rancho La Brea, formerly a grain and stock ranch, from which these fossiliferous asphalt strata have been named by Prof. J. C. Merriam the "Rancho La Brea Formation."

The avian remains which have been collected from these beds have been studied by Mr. Miller, who has published two papers describing two remarkable extinct types. His first paper[1] deals with a fossil species of Peacock, represented by a series of well-preserved tarso-metatarsal bones, which are shorter and stouter than those of *Pavo muticus*, and much larger than those of the common peacock. On the basis of this determination Mr. Miller proceeds to comment on the former distribution of the genus *Pavo*, fossil forms of which have been recorded from the Tertiary and Quaternary formations of Europe and India, in comparison with its present restricted range, the wild stock being now confined to southern Asia.

The other form described by Mr. Miller[2] is a raptorial bird, much larger and otherwise so different from any of the existing birds of prey, that the propriety of recognizing it as referable to a new family (Teratornithidæ) is suggested. The species is represented by parts of several skulls and other important fragments of the skeleton, as the sternum and pectoral arch. The species is named *Teratornis merriami*, in honor of Prof. John C. Merriam of the University of California, so well known for his important investigations of the Quaternary vertebrate fossils of California. From the comparative figures given of the reconstructed skull of *Teratornis* and of skulls of the California Condor and Bald Eagle, it is shown that *Teratornis* was a bird of immense bulk, at least twice the size of the Condor and several times larger than the Bald Eagle.

Among the avian species thus far found in the Rancho La Brea beds are the existing California Condor, the Turkey Vulture, Golden Eagle, various species of hawks and owls, geese, the Great-Blue Heron, and Raven. The

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[1] *Pavo californicus*, A Fossil Peacock from the Quaternary Asphalt Beds of Rancho La Brea. By Loye Holmes Miller. University of California Publications, Bulletin of the Depart. of Geology, Vol. V, No. 19, pp. 285–289, pl. xv. August, 1909.

[2] *Teratornis*, a new Avian genus from Rancho La Brea. *Ibid.*, V, No. 21, pp. 305–317, with 11 text figures. September, 1909.

extinct species include an indeterminate species of stork, crane, pheasant, etc., besides the two extinct species already mentioned, and a Black Vulture, considered to be specifically distinct from the existing species and (in a footnote) named *Catharista occidentalis.*— J. A. A.

Ticehurst's 'A History of the Birds of Kent.'— The County of Kent, in the southeast of England, is an area of small extent, with a length of some 64 miles and an average breadth of about 26 miles. It is for the most part low, much of it below one hundred feet above sea-level and only small portions reach an elevation of 500 feet. It is, however, rich in bird life, which has had frequent historians, at least for portions of the County. Mr. Ticehurst states that "some eighteen books or pamphlets have been written dealing with the avifauna of the whole or a part of Kent or containing lists of birds that have been found in different districts," the first historian having been William Boys (1735–1803), who obtained the type specimens of the Sandwich Tern, the Dartford Warbler and the Kentish Plover, all described by Latham from specimens obtained by Boys at Sandwich, in Kent. Mr. Ticehurst, however, is the first to take up the work exhaustively, and to produce a monograph [1] that will long be the standard on the subject. An introduction of some 30 pages treats of the topography, geology, and vegetation, and the relation of these features to the avifauna; the local migration, number of species, the local museums and collections that contain Kentish specimens, and the work of former authors on the birds of Kent. From this we learn that the species entitled to be recognized as birds of Kent number 312, with 42 others whose claims to such recognition are considered doubtful, but which are presented in bracketed paragraphs. "Of the 107 species which breed regularly in Kent 37 are purely summer visitors and 70, whether migratory or not, may be found in the county throughout the year."

The main text takes up the species in systematic sequence, beginning with the Thrushes, with reference to their manner of occurrence in Kent, special consideration being given to the subject of their local movements and migrations. Following the names of each species references are given to the principal works on Kentish birds, citing the names only of the authors and page references to their works, which are listed, with their full titles, in a bibliography of the books and periodicals consulted (pp. xxv–xxix), while the original records, in the case of the rarer species, are cited in footnotes.

On casually turning the pages of the work one may be struck with the antiquated character of the technical nomenclature, but this is explained in the preface as follows: "With regard to the vexed questions of nomen-

[1] A History | of the Birds of Kent | By | Norman F. Ticehurst, | M. A., F. R. C. S., F. Z. S., M. B. O. U. | With twenty-four plates and a map | Witherby & Co.| 326 High Holborn London | 1909 — 8vo, pp. i-lvi + 1–568, 24 half-tone plates, and a large colored map. Price, 21s. net.

clature, for the convenience of those who practically confine their studies to British birds, that system has been adhered to, so far as possible, which was adopted by the late Howard Saunders in the second edition of his well-known 'Illustrated Manual of British Birds' [1899], together with the revisions made by the same author in his 'List of British Birds revised to July, 1907.'" The author so far departs from this system, however, as to admit trinomials where two or more races of the same species have occurred in Kent; and it is perhaps an open question whether it would not have been more in the interest of his local readers if he had also employed the approved modern technical names in place of those that merely recall a former phase of nomenclature, giving also, if considered desirable, the names preferred by Saunders. Otherwise how will the currently approved names of to-day ever become known to the class of readers the author is so solicitous to serve?

The "economic aspects" of the species are among the topics especially included within the author's scope, and on turning to his account of the Starling we find the followng statement, which seems of sufficient interest to warrant its presentation in the present connection, since we now have this bird with us, "for better or for worse." He says: "From an agricultural standpoint the Starling is a most useful and valuable bird, and it is important in a county like Kent that this should be thoroughly recognized; it is true that in the fruit-growing districts they do a considerable amount of damage to the cherry crop, and it appears desirable that their numbers in these districts should be kept within reasonable limits, and this is done by a systematic thinning every season, though in view of this bird's migratory habits this can only be effective if done in the breeding season. Elsewhere they do nothing but good, devouring enormous numbers of wireworm, cranefly and cockchafer larvæ, besides feeding at certain times of the year on the perfect insects themselves, particularly the cranefly. I for one offer them every encouragement in the way of nesting boxes, to which they very readily take."

In the British Islands and in western Europe the Starling is a migratory bird, the breeding birds of Kent, with their young beginning (at least in part) to leave late in July, and the autumn emigration is continued until the middle of September; while the "return of the summer breeding stock begins at the end of February and lasts throughout March to early April." The Starling is present, however, in Kent, as in other parts of England, throughout the year, the winter population arriving from central Europe mostly during October. It is interesting to note that the colonies of Starlings that have recently become established in the United States, particularly those about New York city, are non-migratory, merely assembling in flocks soon after the breeding season and extending their foraging trips to the nearby adjacent country.

In respect to the House Sparrow, Mr. Ticehurst considers the question of its being harmful or useful an open one — "one of the burning questions of the day"— and urges a scientific inquiry "under Government authority,

not only to thresh out the whole question, but, in the event, as seems probable, of an entirely adverse verdict being recorded against the bird, to specify definite methods for keeping its numbers within proper bounds." He adds, however, that "there seems to be hardly a crop that is grown that is not said to suffer more or less at some time of the year from the depredations of this bird."

The illustration of this excellent work comprise a large folding map of the County of Kent, colored to indicate altitude for each hundred feet from sea level to 500 feet; half-tone plates of the typical haunts of various species of birds, and of some of the rarer species; also facsimile reproductions of the original plates of the Dartford Warbler (from Pennant's 'Zoology,' 1776), the Cream-colored Courser (Latham's 'Synopsis,' 1785), the Kentish Plover (Lewin's 'Birds of Great Britain'), and the Sandwich Tern (Boys's 'History of Sandwich,' 1784), all drawn from specimens killed in Kent, and hence of special local interest.— J. A. A.

J. Grinnell on New North American Birds.— Two new North American Cowbirds marked the closing days of 1909, Mr. Grinnell, in a paper [1] bearing date December 31, 1909, describing a new form based on a series of eleven males from Humboldt County, Nevada, under the name *Molothrus ater artemisiæ*, while Dr. L. B. Bishop, in 'The Auk' for January, 1910 (mailed January 3), described as new a form from Saskatchewan as *Molothrus ater dwighti*. These two forms are both characterized as larger than the two previously recognized forms of this species (*ater ater* and *ater obscurus*), with a slenderer bill, but as not presenting any color differences. Whether the two new forms are separable from each other is not very clearly evident from the descriptions, since the measurements in the one case are given in millimeters and in the other in inches, rendering the reduction of the one system to the other necessary before a comparison can be made. This is unfortunate and should not be countenanced, especially since the metric system is now almost universally the standard in all scientific investigations except in ornithology, where the tendency in some instances is to adhere to an obsolete method for the convenience of the few who are willing to allow temporary inconvenience to outweigh and retard the adoption of a new but generally approved standard.

Mr. Grinnell contends that his new Great Basin form is derived from southern or Mexican stock — from *obscurus* rather than from *ater* — and we believe that few who have given consideration to parallel cases will disagree with him. We are surprised, however, at his attitude respecting the nomenclature of these and similarly allied forms in other groups. He says (in a footnote to p. 277): "As to the nomenclatural treatment of the

[1] A New Cowbird of the Genus *Molothrus*, with a note on the probable Genetic Relationships of the North American Forms. By Joseph Grinnell. University of California Publ., Zoöl., Vol. V, No. 5, pp. 275–281, 1 text figure. December 31, 1909.

three forms here distinguished, I am reluctantly following recent precedent....I have no evidence whatever that the three forms, *ater*, *artemisiæ*, and *obscurus*, intergrade continuously and geographically between each other. In other words their distinctness is specific on any criterion excepting those of relatively close similarity in gross appearance, and individual overlapping in separate characters." He appears to forget, for the time being, that while the Cowbird group has a continuous, though over some unfavorable areas a sparse, distribution over the greater part of the North American continent, his "lack of evidence" is purely negative evidence; and that forty to fifty years ago scores, indeed hundreds, of vertebrate forms were ranked as unquestionable species which have since been found to intergrade as additional material came to light from intervening localities, and their subspecific status and complete intergradation with other forms demonstrated. When it comes to naming such slightly differentiated forms as these Cowbirds, surely the probabilities in the case, as established by experience, should receive some consideration, and be allowed at least as much weight as the absence of contrary evidence.

We are even more surprised that Mr. Grinnell should advocate abandoning the use of trinomials, on account of the "tendency among ornithologists nowadays to 'reduce' all congeneric forms in plastic groups to subspecific status." It may be admitted that here and there may be found an ornithologist who is given to excessive 'lumping,' but in general the attitude is reasonably conservative, and the excessive lumpers are not the standard bearers. Yet Mr. Grinnell takes the matter very seriously, continuing: "Indeed it might even be urged with reason that trinomials have outlived their usefulness, and that a pure binomial system, as consistently followed by Sharpe in his 'Handlist of Birds,' is adequate and decidedly less cumbersome." On this point we have already expressed ourselves with some emphasis in two reviews of this same 'Handlist,' [1] the gist of which is that such uniform treatment of all forms, whether known to intergrade or not, is grossly misleading, giving no clue to their real or 'genetic' relationships or to their relative distinctness and degree of differentiation. Sharpe, for instance, who is here cited as the model after whom we should pattern, recognizes hosts of forms as full species that really have no claim whatever to recognition in nomenclature, including forms that have even been abandoned by their proposers, and others condemned by the consensus of experts. If he had in each case, by the use of trinomials, given them the value currently assigned them, even the unwary layman would have some proper conception of their value and relationships, but now all have to him the same value and only the expert can make the proper discrimination under this uniform and "consistent" binomial method.

Mr. Grinnell has also described two new forms of the Bewick Wren group [2]

[1] Auk, XXVII, Jan. 1910, pp. 93–95 (*cf.* p. 95); Science, N. S., XXXI, pp. 265–267, February 18, 1910.

[2] Two heretofore unnamed Wrens of the Genus *Thryomanes*. By Joseph Grinnell. University of California Publ., Zoology, Vol. V, No. 8, pp. 307–309. February 21, 1910.

from California, and a new interior form of the Savannah Sparrow.[1] The latter is based, like the new form of Cowbird, on specimens from Humboldt County, Nevada, and named *Passerculus sandvicensis nevadensis*. It differs from *P. s. alaudinus*, its presumably nearest relative, in its extreme pale coloration. The type of *alaudinus* is stated to have come from California, and as the swarms of Savannah Sparrows that visit the coast region of California belong to the dark form, Mr. Grinnell has properly given the new name to the lighter colored interior form. He quotes Mr. Brewster as having previously called attention to the composite nature of the group of Savannah Sparrows hitherto referred to *alaudinus*.

With the addition of Mr. Grinnell's two new forms of the *Thryomanes bewicki* group, he claims to be "able clearly to distinguish....eight geographic races within the limits of the State of California, occupying as many separate areas of differentiation." These eight forms are here listed, with their ranges. The new forms are *T. b. marinensis*, occupying "the humid coast belt north of the Golden Gate and San Francisco Bay, in Marin and Sonoma counties," and *T. b. catalinæ*, from Santa Catalina Island, southern California, differentiated from the adjoining mainland form *charienturus*, to which these island specimens were formerly referred. The former is separated from *spilurus*, as formerly circumscribed.

As the difference between "lumpers," "splitters," and "conservatives" is no doubt largely temperamental, we shall doubtless have all three classes always with us. But the downfall of trinomialism, if it ever comes, will be through its abuse, due to the temptation and facility it offers for ultra splitting. There are local differences that may be distinguishable to an expert that are often too trivial and too uncertain and insignificant to warrant recognition in nomenclature, since the added burden gives no commensurate return. The general facts may be recognized and recorded, and their significance noted, as is repeatedly done by good specialist who are not open to the charge of being lumpers. Mammals, for example, are far more plastic than birds, so much so that it is found necessary to pass over minor and extremely local variants in order not to reduce nomenclature, in the matter of subspecies, to a burden of names, a considerable portion of which would have not only little significance but would belittle the real function of nomenclature.— J. A. A.

Beebe on the Tail Feathers of the Motmots.[2]— It has long been known that the characteristic racket-shape of the central rectrices of certain species of Motmots is produced by the action of the bird itself in picking off the barbs from the subterminal portion of the feathers. That this act was performed by the bird purposely appeared so obvious that it has

[1] The Savannah Sparrow of the Great Basin. By Joseph Grinnell. *Ibid.*, pp. 311–316. February 21, 1910.

[2] Racket Formation in the Tail-Feathers of the Motmots. By C. William Beebe, Curator of Birds. Zoologica: Scien. Contr. New York Zoöl. Soc., Vol. I, pp. 141–149, figs. 43–47. January 15, 1910.

almost universally been regarded as a case, unique among birds, of intentional self-mutilation, presumably for the purpose of ornamentation. Furthermore, as the rectrices exhibit a narrowing of the vane at the point where later denuded, this has been used by those who believe in the inheritability of acquired characters as evidence in support of their views.

As far back as 1885 Dr. Stejneger figured the tail of a specimen that had the middle feathers partly bare although the tail was only half grown. In his remarks he came very near the true solution of the problem, but his surmises were not quite correct in detail.

Mr. Beebe's conclusions are based on the study of a live specimen of *Momotus lessoni* and on the examination of skins of various species.

In the captive bird, on one occasion, the growing rectrices were found to be already denuded while yet enclosed in the sheath; in this case, therefore, any trimming by the bird, intentional or otherwise, was wholly precluded. While in this particular instance, the denudation was premature, due probably to the birds' low vitality, yet this condition is approached by another species, *Eumomota superciliaris*, in which the shaft is stripped for a greater distance than in its allies. Here the dropping of the very short barbs occurs almost as soon as the growing feather is free from the sheath and long before it has reached its full length.

Upon close examination of the tail feathers of *Momotus mexicanus* and other species it was found that in the freshly grown feather the portion later denuded differs from the normal part of the vane in having the basal part of the barbs almost free from barbules and the barbs themselves slightly weaker than usual. This naturally renders the barbs liable to break away from the shaft at the point of connection.

Mr. Beebe concludes that the trimming of the feathers is not intentional on the bird's part, but is merely incidental to the ordinary preening of the plumage, and that no inheritance of acquired characters is necessary to explain the constriction of the vane, both this feature and the basal degeneration of the vane being congenital and due to some wholly unknown cause.— W. De W. M.

'Cassinia.'— 'Cassinia, A Bird Annual,' has again promptly made its appearance, this being the tenth issue of the 'Proceedings' of the Delaware Valley Ornithological Club of Philadelphia under this title, and forming No. XIII of the Proceedings of this active organization, which on January 6 of the present year celebrated its twentieth anniversary. As usual, it sticks to its text, the "Ornithology of Pennsylvania, New Jersey and Delaware," but, under the continuous editorship of Mr. Stone, contains, also as usual, matter of wide interest. The editor contributes another of his happy sketches of early Philadelphia ornithologists, this time dealing with the late Dr. Thomas B. Wilson, so well known as the liberal patron of the Academy of Natural Sciences of Philadelphia, to whose gifts the Academy owes its almost unrivalled natural history library and the Rivoli, Gould, and other notable collections of foreign birds, purchased

and presented to the Academy some fifty to sixty-five years ago. Although an investigator of marked ability in several fields of scientific research, he published almost nothing, but imparted freely his discoveries to others for publication. While his name is thus missing from the list of eminent naturalists, it stands high on the roll of the patrons of science.

Other papers in the present number of 'Cassinia' are: 'The D. V. O. C. and its Twentieth Anniversary,' by George Spencer Morris; 'Duck Shooting on the Coast Marshes of New Jersey,' by I. Norris De Haven, with supplementary matter by Mr. Stone; 'Cruising through the New Jersey Pine Barrens,' by J. Fletcher Street; 'On the Nesting of the Broad-winged Hawk and Goshawk in Pennsylvania' (with two half-tone plates), by Robert P. Sharples; 'Breeding Birds of Passaic and Sussex Counties, New Jersey,' by William L. Baily (an annotated list of 94 species); 'Report on the Spring Migration of 1909,' compiled by Witmer Stone; 'Abstract of Proceeding of the Delaware Valley Ornithological Club, 1909'; 'Bibliography for 1909,' comprising titles of papers relating to the birds of Pennsylvania, New Jersey and Delaware, and of other ornithological papers by members of the Club; and a list of the officers and members of the Club. (For further notice of the celebration of the twentieth anniversary of the Club, and a list of the officers of the Club for 1910, officially communicated, see below under 'Notes and News.')— J. A. A.

J. Grinnell on the Birds of the Prince William Sound Region, Alaska.[1]— This is a report on the birds collected by Miss Annie M. Alexander's third expedition to Alaska, made in the summer of 1908, the party being composed, in addition to Miss Alexander, of Joseph Dixon, Edmund Heller, A. E. Hasselborg, and Miss Louise Kellogg. The material obtained, on which the present report is based, consists of the note-books of the collectors, 500 bird skins, ten sets of eggs and a few nests, now in the University of California Museum of Vertebrate Zoölogy, as a gift from Miss Alexander. This report is preceded by a similar one by Mr. Edmund Heller on the mammals, in which the itinerary, collecting stations, and the physiography of the region are described in detail, including the islands in Prince William Sound and the adjoining mainland coast. The life zones represented in this district are the Hudsonian and the Arctic-Alpine. The fauna is naturally scanty, the mammals obtained numbering only 16 species, and the birds collected or noted, 89 species, specimens of 86 of which were taken.

The introduction to Mr. Grinnell's paper on the birds contains a numbered 'Check-list of the Species Observed,' followed by the very fully annotated "general account," a discussion of the composition and origin of the avifauna of the Prince William Sound district, and of "melanism in the

[1] Birds of the 1908 Alexander Alaska Expedition, with a note on the Avifaunal Relationships of the Prince William Sound District. By Joseph Grinnell. University of California Publ., Zoölogy, Vol. V, No. 12, pp. 361–428, pll. xxxii–xxxiv, 9 text figures. March 5, 1910.

endemic species." The following six subspecies are described as new: (1) *Canachites canadensis atratus*, (2) *Lagopus rupestris kellogæ*, (3) *Ceryle alcyon caurina*, (4) *Dryobates pubescens glacialis*, (5) *Passerella iliaca sinuosa*, (6) *Penthestes rufescens vivax*.

In this district of excessive humidity Mr. Grinnell notes "an increase in the extent of the black markings and a darkening of the shades of brown and green, and a reduction in the general size, and disproportionate shortening of the wings and tail," in comparison with the species of the Sitkan fauna to the southward and of the Yukon fauna to the northward, these features characterizing, in varying degree, the new forms here described. The "four obvious environmental conditions," as compared with the interior are stated to be (1) an extreme amount of precipitation, (2) a high relative humidity of the atmosphere, (3) a large percentage of cloudy days, and (4) a more uniform temperature, due to impeded radiation. He takes occasion to explain that the "melanism," or increased intensification of color, is not due directly to precipitation but rather to cloudiness and excessive humidity — as we had supposed was generally recognized. Also that the "melanism" is inherited, as shown by the newly hatched young, and not acquired during the life of the individual. This and allied questions are discussed at some length near the close of the paper, which will be welcomed as a valuable contribution to the ornithology of a hitherto little known but intensely interesting area.— J. A. A.

McGregor's 'A Manual of Philippine Birds.' [1]— A manual of Philippine birds, giving descriptions of the species in convenient form, has evidently been long needed by students of Philippine ornithology, especially those resident in the Philippine Archipelago where libraries well stocked with ornithological works are naturally few. Mr. McGregor has therefore done a good service in supplying this need. The work has been issued in two parts, continuously paged, and may thus be bound together as a compact, handy volume of nearly 800 pages. Keys and diagnoses of the higher groups, with keys to the species, facilitate its use, and sufficient bibliographical references are given under the species to enable the reader to refer to original sources for further information. The work is well planned and carefully prepared, and will thus bear comparison with the best standard works of its class.

The technical name of the species is followed by an English name, such references to the literature as are deemed necessary, including the synonymy, and by "such native names as seem to be commonly used with some degree of accuracy." Then is given the distribution, by islands in alphabetic sequence, with the authority for the records. The descriptions include the external characters and measurements of usually both young and adult

[1] A Manual | of | Philippine Birds | By | Richard | C. McGregor | Part I | Galliformes to Eurylæmiformes | [Seal] Manila | Bureau of Printing | 1909 — 8vo, pp. i–x + 1–412. "Actual date of publication, April 15, 1909." Part II, Passeriformes. Pp. xi–xvi + 413–769. "Actual date of publication, January 31, 1910."

with the sexual and seasonal variations, and, when available, a fairly full biographical account of the species. Although the work is based on a large collection of Philippine specimens, and on extended field experience in the islands, the author has been compelled to rely on other works for such of the species (about 150), particularly among the water birds, as were unrepresented, or inadequately represented, in the 8000 specimens of Philippine birds in the Museum of the Philippine Bureau of Science, due credit of course being given for the borrowed material. Much previously unpublished biographical matter is taken from a manuscript work on Philippine birds prepared some years ago by Messrs. Frank S. Bourns and Dean C. Worcester for publication by the Minnesota Academy of Sciences. The classification is that of Sharpe's 'Handlist,' which "is followed as both convenient and well known." The 'Handlist' is also followed in the use of binomial names for all the forms recognized, so that the Philippine ornis here numbers 739 [1] "species," there being no subspecies.

As already said, Mr. McGregor's 'Manual' is opportune and will be of great use to all students of Philippine ornithology.— J. A. A.

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Grinnell, Joseph. (1) Miscellaneous Records from Alaska. (Condor, Vol. XII, Jan. 1910, pp. 41–43). (2) A New Cowbird of the Genus *Molothrus*, etc. (University of California Publ., Zoölogy, Vol. V, No. 5, pp. 275–281, Dec. 31, 1909.) (3) Two heretofore unnamed Wrens of the Genus *Thryomanes*. (*Ibid.*, No. 8, pp. 307–309, Feb. 21, 1910.) (4) The Savannah Sparrow of the Great Basin. (*Ibid.*, pp. 311–316, Feb. 21, 1910.) (5) Birds of the 1908 Alexander Alaska Expedition, etc. (*Ibid.*, No. 12, pp. 364–428, March 5, 1910.

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[1] These are consecutively numbered in the text, while 8 more are added in the "corrections and additions" at the end of the volume, increasing the total number to 747.

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NOTES AND NEWS.

Henry Hillyer Giglioli, an Honorary Fellow of the American Ornithologists' Union, died at Florence, Italy, December 14, 1909. A notice of his life and ornithological work will be given in a later number of this journal.

John Farwell Ferry, an Associate of the American Ornithologists' Union, died at St. Luke's Hospital, Chicago, February 11, 1910, of acute pneumonia, at the age of 32 years. He was born October 12, 1877, and was a grandson of John V. Farwell, a wealthy dry goods merchant, and though reared in affluence, he preferred an outdoor life to the counting room of a great business institution, having early developed a strong love for natural history. After preparation for college at Andover, Massachusetts, he took a civil engineering course at the Sheffield Scientific School at Yale, graduating in 1901. He remained in New Haven till 1902, acting as secretary of the Young Men's Christian Association. For the next two years he was a traveling agent for the American Cereal Company for the New York State territory. Finding, however, a commercial career distasteful he became associated with the U. S. Biological Survey as a field collector, under the direction of Dr. C. Hart Merriam, spending one season in California collecting birds and mammals. On February 1, 1906, he joined the staff of the Field Museum of Natural History as assistant in the Department of Zoölogy, under Prof. Charles B. Cory, curator, and later made a number of expeditions in the interests of the Field Museum. In 1907 he visited various sections of Illinois, and in January, February, and March, 1908, visited Panama and Costa Rica, where he secured a valuable collection of birds and mammals. From Costa Rica he went to Venezuela, and made collections on the adjacent islands of Curaçoa, Bonaire, and Aruba. In January, 1909, he again visited the islands off the coast of northern South America and spent several months exploring the islands

of Tortuga, Blanquilla, Los Hermanos, Testigos, Margarita, Los Roques, and Orchilla. Many of these islands had not been previously visited by a collector. Eight new species and subspecies of birds were procured, one of which was named by Mr. Cory in his honor, *Cœreba ferryi*. In May and June, 1909, he visited the Quill Lake region, Saskatchewan, for the purpose of securing various species of birds in breeding plumage, with their nests and eggs, for use in the preparation of a series of exhibition groups representing the bird life of that region, in which undertaking he was most successful. His paper on the Summer Birds of Saskatchewan in the present number of 'The Auk' (pp. 185–204) is based on observations and collections made during this expedition. At the time of his death he was preparing a paper on the birds of Costa Rica, based on his visit to that country in 1908. He was an enthusiastic collector and excelled in field work. His publications in ornithology include papers based on his field work in California, Illinois, Venezuela, and Saskatchewan, as follows:

1. Ornithological Conditions in Northeastern Illinois, with Notes on Some Winter Birds. Auk, XXIV, April, 1907, pp. 121–129.
2. Winter Bird Notes from extreme Southern Illinois. Auk, XXIV, July, 1907, pp. 281–286.
3. Further Notes from extreme Southern Illinois. Auk, XXIV, Oct. 1907, pp. 430–435.
4. Notes from the Diary of a Naturalist in California. Condor, X, pp. 30–44, 1908.
5. A Month's Bird Collecting in Venezuela, Condor, X, pp. 225–230.
6. Birds Observed in Saskatchewan during the Summer of 1909. Auk, XXVII, April, 1910, pp. 185–204, pll. x-xii.

Mr. Cory's recent paper on 'The Birds of the Leeward Islands' (see Auk, Jan., 1910, pp. 99, 100) was based largely on the material and field notes of Mr. Ferry taken during his two trips (as noted above) to these islands.

Mr. Ferry was a man of exceedingly attractive personality, warm-hearted and enthusiastic, and had his life been spared he would doubtless have soon attained a position of some eminence in ornithology.[1]

THE following respecting the Kuser Asiatic Expedition was received too late for use in the January issue of this Journal.

On December 29, 1909, Mr. C. William Beebe, Curator of Birds in the New York Zoölogical Park, sailed on the 'Lusitania' for London, accompanied by Mrs. Beebe. Mr. Bruce Horsfall, artist, followed on a later steamer. After several weeks' study of the pheasants in the British Museum, Mr. Beebe will proceed direct to Ceylon and India, where field studies will be made of the wild pheasants and jungle fowl. The

[1] This notice is based mainly on information kindly supplied by Mr. Charles B. Cory, Curator of Zoölogy at the Field Natural History Museum, Chicago, and on further details contributed by Mr. R. M. Barnes, of Lacon, Ill., who was one of Mr. Ferry's companions on the Saskatchewan trip in 1909.

object of the expedition is to obtain data, written, photographed, and painted, concerning the ecology of the Phasianidæ. The tentative itinerary includes the Himalayas, Burma, Sumatra, Java, Borneo, Cochin China, Palawan, Formosa, Eastern China and Japan, the party returning by way of Honolulu and San Francisco.

Mr. Beebe has been granted a twelve month's leave of absence without pay, and in his absence his correspondence and the continuing of his experimental work at the Zoölogical Park will be carried on by Mr. Lee S. Crandall.

The results of the expedition will be published in monographic form, illustrated with colored plates of all the more important species of pheasants, by Charles R. Knight, Louis Agassiz Fuertes and Bruce Horsfall. The treatment will be rather from the point of view of the ecology of the living birds and their care in captivity, than systematic and anatomical.

Living specimens of Argus and other rare forms will be brought back, together with a collection of skins and studies for backgrounds.

The widespread interest in pheasants in this country and the lack of knowledge of their habits in a wild state seem to indicate a field for such a work.

The expedition will be made, and the monograph published, under the auspices of the New York Zoölogical Society. Credit for the inception and the entire financing of the expedition and monograph, is due to Colonel Anthony R. Kuser of Bernardsville, New Jersey. The success of the undertaking will be altogether due to that gentleman's enthusiastic love of birds and disinterested generosity.

Mr. Beebe is in charge of the bird collection and the experimental station at Faircourt Aviaries on Colonel Kuser's estate, and the painting and all other monographic work will be carried on at that place.

The Delaware Valley Ornithological Club, whose organization was announced in 'The Auk' for July, 1890 (Vol. VII, 298, 299) celebrated the twentieth anniversary of its founding on January 6, 1910, at the Academy of Natural Sciences, Philadelphia. Forty-eight members were in attendance and Dr. A. K. Fisher was present as the guest of the Club. Addresses were made by Dr. Fisher, Dr. Wm. E. Hughes, Mr. Samuel N. Rhoads and Mr. Witmer Stone. In the twenty years of its existence the Club has done much to develop ornithological interest in the region covered by its activities. One hundred and eighty-one men have been enrolled as members, a volume on the Birds of Eastern Pennsylvania and New Jersey and nine annual numbers of Cassinia have been published, a total of 981 pages and 28 plates. Three hundred and thirty-five meetings have been held, with an average attendance of twenty for the past fifteen years. The officers of the Club elected for the ensuing year are: President, Samuel N. Rhoads; Vice-President, Stewardson Brown; Secretary, J. Fletcher Street; Treasurer, Samuel Wright.

THE offer of a reward for the discovery of any surviving representative of the Passenger Pigeon, as published in the last number of this journal (Jan., 1910, p. 112), naturally suggested to some minds that this offer would prove a good method of exterminating the last survivors, should any still remain, of this noble bird. But Dr. C. F. Hodge, of Clark University, Worcester, Mass., now in charge of the investigation, in reporting progress in a recent issue of 'Forest and Stream' (for Feb. 12, 1910, pp. 253, 254), seems to give assurance that no such result need be feared. After stating that the total amount subscribed has reached the sum of $3,045, he says: "None of this money has been paid in and none will be asked for until nests have been reported and confirmed; or until office expenses have exceeded $100 which Dr. Hodge has agreed to contribute to the work.

"The following points should also be emphasized:

"1. All the above awards are offered solely and only for exclusive and confidential information of the location of an undisturbed nesting pair or colony of Passenger Pigeons discovered during the nesting season of 1910.

"2. No one connected with this work wishes possession of any birds alive or dead. We are working solely for the absolute and universal protection of the free wild pigeon.

"3. We can give no information as to the value or price of skins, eggs or mounted specimens.

"4. All offers — that we know of — for freshly killed birds have been withdrawn...."

It is further stated that nine localities have been reported where pigeons are said to have nested in 1909. These include points in New Hampshire, Massachusetts, New York, Pennsylvania, Wisconsin, Illinois, and Kansas. None of the information secured as to nesting sites or places where pigeons have been found will be published until after the nesting season of this year.

THE following sad tale of the wholesale destruction of seabirds by Japanese poachers at Laysan Island and at Lisiansky Island needs no comment. It is taken from the 'Army and Navy Register' of February 19, 1910, and is based on an official report to the United States Treasury Department by the Commander of the steamer 'Thetis' of the U. S. Revenue-Cutter Service.

"A very interesting report has been received at the Treasury Department from Captain W. V. E. Jacobs, U. S. Revenue-Cutter Service, commanding the Thetis, relative to the arrest of Japanese poachers and the seizure of birds and plumage on Laysan and Lisiansky islands of the Midway group.

"On the Island of Laysan fifteen Japanese subjects were found occupying and using for warehouses the thirteen buildings grouped on the west side. One of the buildings was full of the breasts of feathers of birds in bulk; another was two-thirds full of loose bird wings and a number of stuffed birds of various species, while on the sand adjacent to the buildings were about 200 mats held down by rocks, under which were laid out masses

of bird wings in various stages of curing. Two armed boat crews from the Thetis landed on the island under the command of Second Lieutenant George E. Wilcox, who arrested the fifteen Japanese subjects and seized all the plumage. There were taken 65 bales of birds' wings, 28 large and 3 small bags and 13 bales of feathers, and two boxes of stuffed birds. It is estimated that the number of wings was 119,000. It appears that the Japanese killed the birds during daylight with a stick and then cut off their wings and plucked them.

"The Thetis then proceeded to Lisiansky Island, where an anchorage was found on the morning of January 19 last. An officer and an armed boat crew were sent ashore at once to investigate conditions there. A party of eight Japanese was arrested, and the amount of plumage seized consisted of nineteen bales of bird feathers, one box of stuffed birds, one box and sixty-five bags of birds' wings. The number of wings was estimated at 140,400. Four small buildings were found on this island, one of which was used as a dwelling by the Japanese. A number of other islands was visited by the Thetis, but these were the only two where poaching was found to be carried on.

"From information obtained through interpreters it was found that the Laysan party was at work on the island from April 17, 1909, to January 17, 1910, a period of nine months. In August last the island was visited by a Japanese vessel, which brought nine new men and took away nine of the old party. The amount of plumage shipped from Laysan in August appears to have been 30 bales of feathers, aggregating about one ton, and 70 bales of wings, aggregating 128,100 bird wings. The same procedure took place at Lisiansky Island, a Japanese vessel reaching there with a relief party in August. The number of bird wings taken from this island in August is estimated at 108,000.

"The system followed in the process of curing the bird wings is, when the wings are cut off, the bone is removed and a small amount of lime is sprinkled on them or rubbed into them. They are then spread out on the sands to dry. If the weather continues good, the wings are cured in from four to five days and are then packed into bales. During the process of packing naphthaline powder is sprinkled over the layers, and when filled the bales are sewed up and are then ready for shipping. If rains occur during the curing time, the wings are covered with several thicknesses of mats, which are held in place by rocks. At the time of the arrival of the Thetis, being the rainy season in those latitudes, a considerable number of wings was found under mats in various stages of curing."

A press despatch from Honolulu, dated March 16, 1910, states that the twenty-three Japanese poachers captured by the officers of the 'Thetis' were sentenced the preceding day in the Circuit Court to twenty-four hours imprisonment, the judge being satisfied that they were ignorant tools of others "higher up," whose indictment will now be attempted.